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City of Salford.

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# ANNUAL REPORT

OF THE

## Medical Officer of Health

FOR THE YEAR

1935.

BY

H. OSBORNE,

MEDICAL OFFICER OF HEALTH.







City of Salford.

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# Members of the Health Committee, 1935-36.

Alderman DESQUESNES, *Chairman*.

Alderman J. A. WEBB, J.P., *Deputy-Chairman*.

Alderman SANDS, J.P. ( <i>Mayor</i> ).	Councillor CUDDEFORD, J.P.
„ E. A. HARDY, J.P., ( <i>Deputy-Mayor</i> ).	„ CUTTIFORD, J.P.
„ KEARNS.	„ FEARNEHOUGH.
„ WEBB, L.	„ GREENWOOD (WALTER).
Councillor BINNS.	„ HAYNES.
„ BUCK.	„ HURST.
„ CRABTREE.	„ KITCHIN.
	„ MOULSON.

Also co-opted for Housing Purposes :—

Mrs. SOUTHERN..... Representing the Pendleton Co-operative Industrial Society Limited.

Miss D. L. PILKINGTON..... Representing the Manchester and Salford Women Citizens' Association.

The following members were co-opted upon the undermentioned Sub-Committees, viz. :—

Tuberculosis Sub-Committee—Mr. W. BRICE and Mr. A. FISHWICK representing the Salford Insurance Committee.

Maternity and Child Welfare Sub-Committee—Mrs. WADE, representing the Ladies' Public Health Society; Mrs. SYDNEY FRANKENBURG, representing the Manchester and Salford Women Citizens' Association; and Mrs. NEVITT, representing the Women's Guild of the Pendleton Co-operative Industrial Society Limited.

## STAFF.

## Public Health Department.

---

Medical Officer of Health.....	}	H. OSBORNE, M.D., M.R.C.S., D.P.H., etc.
Administrative Tuberculosis Officer ....		
Honorary Consulting Medical Officer.		C. H. TATTERSALL, M.R.C.S., L.R.C.P., D.P.H.
Clinical Tuberculosis Officers.....	{	E. N. RAMSBOTTOM, M.A., B.Sc., M.D. (Lond.), D.P.H., etc.
		J. V. WHITAKER, M.B., Ch.B., D.T.M. & H., D.P.H.
Maternity and Child Welfare Medical Officers.....	{	M. SPROUL, M.B., Ch.B., D.P.H.
		K. D. ARNSBY, M.B., B.S.
		J. C. KING, M.B., Ch.B., D.P.H.
Consulting Obstetrician.....		W. R. ADDIS, M.C., M.B., Ch.B.
City Pathologist.....		G. J. CRAWFORD, B.Sc., M.D., M.R.C.P., (Lond.), D.P.H.
Assistant Pathologist.....		L. STENT, M.D., M.R.C.S., L.R.C.P.
Venereal Diseases Medical Officer.....		E. TYTLER BURKE, D.S.O., M.B., Ch.B.
Deputy Venereal Diseases Medical Officer.		R. MARINKOVITCH, M.D.
Asst. Venereal Diseases Medical Officer		F. M. BLADES, M.B., Ch.B.

---

## HOPE HOSPITAL.

## WHOLE-TIME STAFF.

Medical Superintendent.....	J. DUDGEON GILES, O.B.E., M.D. (Edin.).
Deputy Medical Superintendent.....	GEORGE BROWN, M.B., Ch.B., F.R.C.S. (Edin.).
Physician.....	WILLIAM MACKAY, M.D., F.R.F.P.S. (Glas.).
Obstetric Officer.....	W. FRAME FLINT, M.B., Ch.B. (Glas.).
Assistant Medical Officers .....	FIVE.

## VISITING (PART-TIME) STAFF.

General Physician.....	G. J. LANGLEY, M.D., F.R.C.P. (Lond.).
Physician for Diseases of Children....	CATHERINE CHISHOLM, C.B.E., B.A., M.D (Manch.).

HOPE HOSPITAL -VISITING (PART-TIME) STAFF *Continued.*

Obstetrician and Gynaecologist .. .. .	J. W. A. HUNTER, M.D. (Edin.), M.C.O.G.
Orthopaedic Surgeon.....	S. M. MILNER, M.A., M.B., Ch.B. (Cantab and Manch.), M.R.C.S., L.R.C.P. (Lond.), F.R.C.S. Eng.
Surgeons (Jointly) for Diseases of the Ear, Nose and Throat. (Appointed 1935).	{ A. A. SMALLEY, M.C., M.B., Ch.B. (Manch.), M.R.C.S., L.R.C.P. (Lond.). L. D. MERCER, M.B., Ch.M. (Sydney), F.R.C.S. (Edin.).
General Surgeon .. .. .	H. T. SIMMONS, B.Sc., M.B., Ch.B., Ch.M. (Manch.), L.R.C.P., M.R.C.S. (Lond.). F.R.C.S. Eng.
Anæsthetist, Radiologist and Lecturer	J. GHOSH, F.R.C.S.I., D.P.H.

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## LADYWELL SANATORIUM.

Medical Superintendent.....	W. EDGE, M.R.C.S., L.R.C.P., D.P.H.
Assistant Resident Medical Officer ..	J. C. PRESTON, M.R.C.S., L.R.C.P., D.P.H. (to 8th December, 1935). W. P. CARGILL, M.R.C.S., L.R.C.P. (from 9th December, 1935).
Junior Resident Medical Officer ...	W. P. CARGILL, M.R.C.S., L.R.C.P. (to 8th December, 1935).
Visiting Aural Surgeon .. .. .	W. B. McKELVIE, M.D., F.R.C.S. (Edin.).

---

## NAB TOP SANATORIUM.

Medical Superintendent.....	H. M. FLEMING, B.A., M.D., D.P.H.
Veterinary Inspector.....	A. ALEXANDER, M.R.C.V.S., D.V.S.M.
Public Analyst .....	H. E. MONK, B.Sc., F.I.C.
Chief Administrative Assistant.....	E. WOOD.
Chief Sanitary Inspector.....	J. P. CARGILL, M.R.S.I.

TO THE HEALTH COMMITTEE OF THE CITY OF SALFORD.

Madam and Gentlemen,

I have the honour to present my Report on the health of the City and the work of the Public Health Department during 1935.

### **Death Rate.**

The death rate for the year was 13.0 per thousand of the population, as compared with 13.6 for the previous year. In only one instance—in 1926—has the death rate for Salford been lower than that for 1935.

### **Birth Rate.**

The birth rate for 1935 was 15.0 per thousand, as compared with 14.7 in 1934. The rate for 1934 was the lowest ever recorded for Salford. The increase in the rate for 1935 is only slight, but it represents an actual increase in the number of births in spite of a reduction in the estimated population of the City.

### **Maternity and Child Welfare.**

I am glad to be able to report that a new low level in the infantile mortality rate, viz., 78 per thousand births, was attained during 1935. Although the average rate for the country is considerably lower than Salford's record rate, the fact that the Salford record has been broken twice within the space of three years is distinctly encouraging and the best possible reward and justification for the activities of the Maternity and Child Welfare Sub-committee.

An important feature of the year's work in the Maternity and Child Welfare Department was the acquisition of premises at 1, Murray Street and 258, Great Clowes Street, Broughton, for use as a Maternity and Child Welfare Centre and School Clinic in place of the Teneriffe Street Schools, which had proved to be unsatisfactory. The work of adapting and equipping the premises was almost completed by the end of 1935 in readiness for their opening early in 1936. The new premises are much brighter, more commodious, and generally more satisfactory than those formerly occupied. No additional Clinics or Centres were established during the year.

In consequence of the fact that the alterations to the Maternity Block at Hope Hospital were not completed by the end of 1935, the Maternity Home and Babies' Hospital remained open throughout the year. As this will be the last

of my Annual Reports in which a report upon a full year's work of that Institution will be contained, I think it desirable to comment upon the excellent work carried out in the Home since it was opened in March, 1925. Under the conditions existing at its opening the Home met a very real and long-felt need, and it was almost always completely occupied. Although somewhat hampered by the fact that it was not originally designed for use as a medical institution, the staff (among whom I would mention especially the Matron, Miss A. A. Wheeler, who acted in that capacity throughout its existence) did their work excellently and earned widespread appreciation. No fewer than 2,628 confinements took place in the Home from its opening until the end of 1935, and during the same period 550 sick babies were tended there.

### **Hope Hospital.**

An important event in the history of Hope Hospital and of the Public Health service of Salford occurred when the Hospital was appropriated under the Public Health Acts on 1st April, 1935. The effect of this decision has been to ensure that the vast majority of cases admitted to the Hospital from that date onwards will be treated outside the Poor Law, thus fulfilling in this respect one of the most important of the provisions of the Local Government Act, 1929, viz., that contained in Section 5 of the Act, to the effect that in preparing their administrative schemes, Councils should have regard to the desirability of securing that, as soon as circumstances permit, all assistance which can lawfully be provided otherwise than by way of poor relief shall be so provided.

It is regretted that it was not found possible to open the Extensions to the Hospital during 1935, but more time than was originally anticipated was required in order to complete the installation of equipment and the reconstruction of "A" Block.

In spite of the general improvement in the conditions of the Hospital which will result from the opening of the Extensions, there is still need for improved accommodation for mental cases, and for the transfer to a more suitable institution of mental defectives. The Hope Hospital Sub-committee has given considerable thought, extending over a number of years, to this subject, but the fact is that there is a definite shortage of suitable accommodation in this part of the country, and until the Lancashire Mental Hospitals Board can see its way to increase their provision for this type of case, the problem is likely to be difficult of solution.

### **Tuberculosis.**

As an instance of the results which may be achieved by a concerted and determined effort in preventive medicine, I think it desirable to call especial attention to the reduction in the number of new cases of tuberculosis notified since schemes for the combating of tuberculosis on a large scale were developed in this country. I reproduce below the figures in respect of notifications of pulmonary tuberculosis for the years 1912 (the year after the passing of the National Health Insurance Act, 1911) to 1935 :—



Year.	No. of notifications of new cases in Salford.	Attack Rate per 1,000 of population.
1912 .....	1,073	4.61
1913 .....	1,206	5.15
1914 .....	1,126	4.79
1915 .....	816	3.70
1916 .....	745	3.47
1917 .....	575	2.72
1918 .....	556	2.65
1919 .....	583	2.57
1920 .....	574	2.44
1921 .....	553	2.31
1922 .....	510	2.11
1923 .....	547	2.26
1924 .....	557	2.28
1925 .....	507	2.07
1926 .....	532	2.15
1927 .....	573	2.31
1928 .....	454	1.87
1929 .....	522	2.21
1930 .....	454	1.97
1931 .....	446	1.97
1932 .....	472	2.14
1933 .....	464	2.13
1934 .....	425	1.98
1935 .....	366	1.74

The improvement indicated by the above-mentioned figures is not peculiar to Salford, but is typical of the progress made throughout the country.

As the Committee are already aware, the reduction in the number of new cases requiring treatment, combined with the effect of the treatment of cases by means of Artificial Pneumothorax, is reducing the demands upon institutional accommodation, especially the type required for the treatment of earlier cases.

#### **Immunisation Against Diphtheria.**

The efforts made in Salford to reduce the incidence of Diphtheria were intensified in August, 1935, by the appointment of a Staff consisting of a Medical Officer, Nurse and Clerk, for the purpose of conducting a whole-time campaign throughout the City. This step was made in continuance and in amplification of the measures taken in this area since 1929 by officers attached to other sections of the Department acting in a part-time capacity. Authority was given for the employment of the whole-time staff for a period of one year only, and a report upon the full year's work will not be available, of course, until August, 1936. Details of the work performed during 1935, however, are included on page 110 of this Report. This method of protection against Diphtheria, of which Salford was one of the pioneers on a large scale, is of proved value, and I am convinced that it will be of the utmost advantage to the present and future



generations. A considerable proportion of the child population of Salford has now been protected, but the results already achieved will be to a great extent nullified unless we can continue to prevail upon parents to have their children protected. The facilities will continue to be available at Infant Welfare Centres, the Schools and other Public Clinics. Children are best protected before they attain school age, and the Health Visitors attached to the Maternity and Child Welfare Department make every effort by means of personal persuasion to induce parents to consent. In spite of the obvious advantages of protection, in the majority of cases difficulty is experienced in securing consent, but it is my intention to continue to use every endeavour to overcome this prejudice and apathy.

I desire to record my appreciation of the great help accorded by the Schoolmasters and Schoolmistresses in connection with the issuing of literature, the assembly of consent forms, and the visits paid by the Immunising Staff to Schools. Without the cordial co-operation of the School Staffs the difficulties would have been much greater than they proved, and the results by no means so appreciable.

#### **Housing Act, 1935.**

The survey of overcrowding in the City, which the Corporation are required to carry out under the above-mentioned Act, was commenced in November, 1935, but was not completed by the end of the year. At the time of writing, the survey has been completed and its results have been reported to the Council. While the survey has confirmed the existence of considerable overcrowding in the City, a method of providing sufficient new dwellings to relieve the overcrowding does not readily present itself, especially having regard to the necessity for proceeding as rapidly as possible with the slum clearance programme.

#### **Slum Clearance.**

Owing to unexpected delays in the completion of the erection of the blocks of flats in Eccles New Road, it has not been found possible to proceed as rapidly as was anticipated with the Slum Clearance Scheme. As I have pointed out previously, the rate of the programme is entirely dependent upon the speed with which new dwellings can be erected. I am hopeful that it will be possible to accelerate the rate of progress during 1936.

In conclusion, I desire to record my appreciation of the consideration extended to me by the members of the Health Committee, and of their constant endeavour to implement schemes for the improvement of the health of the public. Their sympathetic and progressive attitude has been a source of encouragement throughout the year.

I am grateful, too, for the loyal and active co-operation of the staff of the Department.

I have the honour to be, Madam and Gentlemen,

Your obedient Servant,

H. OSBORNE,

Medical Officer of Health.

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## SECTION I.

# Mortality Statistics.

### STATISTICAL SUMMARY, 1935.

**Area.**—The City of Salford has a total area of 5,202 acres.

**Population.**—(Registrar-General's Estimate at Mid-year, 1935)..... 210,000

„ (Census, 1931)..... 223,438

**Density.**—The Mean Density of the City is equal to 40.4 persons per acre.

Live Births	Legitimate	1,582	Males,	1,477	Females	3,059
	Illegitimate	53	„	44	„	97
Total						<u>3,156</u>

**Annual Rate of Births per 1,000 of the Population**..... 15.0

Still Births	Males	125	} Total.....	199
	Females	74		

**Annual Rate of Still Births per 1,000 Total Births**..... 59.3

Deaths	Males	1,457	} Total.....	2,732
	Females	1,275		

**Annual Rate of Mortality per 1,000 of the Population**..... 13.0

**Percentage of total deaths occurring in Public Institutions** ... 51.6 per cent.

**Deaths from Puerperal Causes :—**

	Deaths.	Rate per 1,000 Total Births.
Puerperal Sepsis.....	3	0.9
Other Puerperal Causes.....	13	3.9
Total	<u>16</u>	<u>4.8</u>

**Death-rate of Infants under one year of age per 1,000 live births :—**

Legitimate, 75. Illegitimate, 155. Total..... 78

**Deaths from Measles (all ages)**..... 6

„ „ **Whooping Cough (all ages)**..... 15

„ „ **Diarrhoea (under 2 years of age)** ... 23



TABLE M. 1.

DEATHS IN WARDS FOR THE YEAR 1935.

CAUSES OF DEATH.		AT ALL AGES.																
		City.	Albert Park.	Charlestown.	Claremont.	Crescent.	Docks.	Kersal.	Langworthy.	Mandley Park.	Ordsall Park.	Regent.	St. Matthias.	St. Paul's.	St. Thomas.	Seedley.	Trinity.	Waste.
Enteric Fever.....	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Small-pox.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles.....	6	...	4	...	1	...	...	...	...	...	...	...	...	1	...	...	...	
Scarlet Fever.....	...	3	1	...	2	...	...	...	...	1	1	1	2	1	1	...	...	
Whooping Cough.....	15	3	2	2	1	4	2	...	7	3	1	5	1	1	1	...	...	
Diphtheria and Croup.....	35	3	2	6	4	1	3	1	1	1	2	4	3	2	3	5	...	
Influenza.....	44	2	4	1	2	1	...	...	...	...	...	...	...	...	...	...	...	
Erysipelas.....	7	...	...	...	...	1	...	...	...	...	...	...	...	1	2	...	...	
Encephalitis Lethargica.....	6	1	...	...	...	1	...	1	...	1	...	...	...	1	1	...	...	
Tuberculosis of Respiratory System.....	191	13	12	4	32	6	6	11	10	14	10	19	18	10	6	17	13	
Tuberculous Meningitis.....	5	...	...	...	...	...	...	...	1	2	1	...	1	1	...	...	...	
Other Tuberculous Diseases.....	18	2	...	1	1	...	2	1	3	2	1	...	2	1	...	...	...	
Syphilis.....	11	2	...	...	...	1	1	2	...	...	2	...	...	1	...	...	...	
General Paralysis of the Insane, etc.....	5	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
Cancer (Malignant Disease).....	328	32	20	24	25	11	19	17	18	27	26	14	15	17	14	29	20	
Diabetes.....	25	1	1	1	3	1	4	1	4	2	1	...	2	2	3	...	...	
Rheumatic Fever.....	12	1	1	...	2	...	...	...	...	2	1	...	1	...	2	...	2	
Meningitis.....	5	...	2	...	...	...	1	...	...	...	...	...	...	...	2	...	...	
Cerebro-Spinal Fever.....	6	1	...	...	1	...	...	...	1	...	2	...	...	1	1	1	...	
Cerebral Hæmorrhage, etc.....	129	10	11	9	18	5	9	7	4	6	7	11	7	7	3	9	6	
Heart Disease.....	574	49	34	30	40	29	27	29	30	39	45	34	41	35	25	51	36	
Aneurysm.....	4	...	1	...	...	1	...	...	...	...	...	1	...	1	...	...	...	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

## MORTALITY STATISTICS.

15

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Other Circulatory Diseases.....	178	13	14	10	12	11	11	6	14	18	7	13	5	7	15	10	12	11
Bronchitis.....	165	13	5	5	23	8	8	6	6	10	16	19	13	8	12	1	12	8
Pneumonia (all forms).....	234	20	15	5	16	11	11	8	14	17	25	15	13	17	16	10	18	14
Other Respiratory Diseases.....	28	1	2	...	4	1	1	1	...	2	2	1	5	1	5	2	1	2
Diarrhœa and Enteritis.....	26	4	2	...	1	2	2	3	3	1	...	4	...	...	...	6	...	...
Peptic Ulcer.....	34	7	3	1	...	1	1	...	2	2	4	3	4	1	...	2	2	2
Appendicitis.....	11	...	1	...	1	1	1	...	...	...	1	2	1	1	...	2	1	1
Cirrhosis of Liver.....	9	...	...	...	1	1	...	...	1	2	2	...	1	...	...	...	...	...
Other Diseases of Liver, etc.....	12	...	1	1	1	1	1	...	1	1	1	3	...	...	1	...	1	1
Other Digestive Diseases.....	37	5	3	...	3	2	2	2	2	3	1	1	...	3	4	1	5	2
Nephritis, Acute and Chronic.....	74	5	4	6	7	5	7	7	3	5	3	7	4	4	6	3	2	3
Puerperal Sepsis.....	3	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Other puerperal causes.....	13	2	2	...	1	1	1	...	...	...	...	1	1	1	1	1	1	1
Congenital Debility and Malformation.....	38	4	2	4	1	1	...	2	1	...	6	1	6	1	2	2	3	3
Premature Birth.....	75	2	4	1	3	2	2	3	4	9	6	7	4	3	7	5	8	4
Senility.....	85	7	5	9	4	5	5	8	2	3	7	4	4	3	7	5	8	4
Suicide.....	21	...	3	2	1	3	3	...	2	...	1	1	3	1	...	...	...	4
Other Violence.....	73	6	7	...	3	5	5	4	2	7	3	5	6	4	7	3	5	6
Other Defined Diseases.....	183	13	10	8	10	12	12	10	14	16	10	14	10	5	7	16	15	13
Causes Ill-defined or Unknown.....	5	1	...	...	...	...	1	...	...	...	1	...	1	1	...	...	...	...
Totals.....	2732	223	175	130	216	134	134	134	141	175	196	199	171	155	173	126	224	160

TABLE M. 2.

CAUSES OF, AND AGES AT, DEATH DURING THE YEAR, 1935

CAUSES OF DEATH.	NET DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING WITHIN OR WITHOUT THE DISTRICT.								
	All Ages.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and upwards.
ALL CAUSES—Certified.....	2730	245	34	35	77	120	298	822	1099
Uncertified.....	2	...	...	...	...	...	...	1	1
Enteric Fever.....	2	...	...	...	...	...	...	1	1
Small-pox.....	...	...	...	...	...	...	...	...	...
Measles.....	6	2	1	2	1	...	...	...	...
Scarlet Fever.....	...	...	...	...	...	...	...	...	...
Whooping Cough.....	15	10	3	1	1	...	...	...	...
Diphtheria and Croup.....	35	...	3	9	20	2	1	...	...
Influenza.....	44	2	1	2	...	4	3	17	15
Erysipelas.....	7	1	...	...	...	...	1	3	2
Encephalitis Lethargica.....	6	...	...	...	...	...	1	3	2
Tuberculosis of Respiratory System.....	191	...	...	...	4	50	77	53	7
Tuberculous Meningitis.....	5	...	1	...	2	2	...	...	...
Other Tuberculous Diseases.....	18	...	1	1	2	4	3	5	2
Syphilis.....	11	1	...	...	...	...	1	9	...
General Paralysis of the Insane, Tabes Dorsalis.....	5	...	...	...	...	...	1	4	...
Cancer, Malignant disease.....	328	...	...	...	...	3	20	148	157
Diabetes.....	25	...	...	...	...	...	...	11	14
Rheumatic Fever.....	12	...	...	...	1	4	3	3	1
Meningitis.....	5	...	...	1	1	1	2	...	...
Cerebro-Spinal Fever.....	6	1	1	...	2	1	1	...	...
Cerebral Hæmorrhage, etc.....	129	3	...	...	...	...	5	33	88
Heart Disease.....	574	...	...	...	3	11	39	189	332
Aneurysm.....	4	...	...	...	...	1	...	1	2
Other Circulatory Diseases.....	178	...	...	...	...	...	4	43	131
Bronchitis.....	165	7	...	1	1	2	13	48	93
Pneumonia (all forms).....	234	44	16	6	9	5	33	72	49
Other Respiratory Diseases.....	28	2	2	...	...	1	2	14	7
Diarrhoea and Enteritis.....	26	22	1	...	...	1	...	1	1
Peptic Ulcer.....	34	...	...	...	...	1	7	21	5
Appendicitis.....	11	...	...	1	4	2	1	2	1
Cirrhosis of Liver.....	9	...	...	...	...	...	...	6	3
Other diseases of Liver, etc.....	12	1	...	1	...	...	3	2	5
Other Digestive Diseases.....	37	8	1	...	1	4	2	8	13
Nephritis Acute and Chronic.....	74	...	...	...	2	1	13	36	22
Puerperal Sepsis.....	3	...	...	...	...	1	2	...	...
Other Puerperal causes.....	13	...	...	...	...	1	12	...	...
Congenital Debility and Malforma- tion.....	38	36	...	1	...	...	1	...	...
Premature Birth.....	75	75	...	...	...	...	...	...	...
Senility.....	85	...	...	...	...	...	...	2	83
Suicide.....	21	...	...	...	...	1	4	12	4
Other Violence.....	73	4	2	7	12	7	14	17	10
Other Defined Diseases.....	183	26	1	2	10	10	29	58	47
Diseases ill-defined or unknown....	5	...	...	...	1	...	...	1	3
Totals.....	2732	245	34	35	77	120	298	823	1100



TABLE M. 3.

BIRTHS IN THE CITY OF SALFORD AND IN ITS WARDS, DISTINGUISHING  
DEATHS OF LEGITIMATE AND ILLEGITIMATE  
INFANTS UNDER ONE YEAR OLD.  
FOR THE YEAR, 1935.

Ward.	Births.		Percentage of Illegit. Births to Total Births.	Deaths under One Year.		Proportion of Deaths under One Year per 1,000 Births.		
	Total.	Illegit.		Total.	Illegit.	Total.	Legit.	Illegit.
Albert Park.....	237	10	4.2	21	....	89	92	....
Charlestown.....	215	7	3.3	15	2	70	62	286
Claremont.....	146	....	....	6	....	41	41	....
Crescent.....	287	11	3.8	22	....	77	80	....
Docks.....	156	5	3.5	7	1	45	40	200
Kersal.....	143	5	3.5	7	1	49	43	200
Langworthy.....	146	2	1.4	13	....	89	90	....
Mandley Park.....	201	5	2.5	17	3	85	71	600
Ordsall Park.....	219	11	5.0	18	1	82	82	91
Regent.....	207	1	0.5	19	....	92	92	....
St. Matthias'.....	267	11	4.1	17	3	64	55	273
St. Paul's.....	179	5	2.8	13	1	73	69	200
St. Thomas'.....	222	10	4.5	19	2	86	80	200
Seedley.....	121	4	3.3	14	....	116	120	....
Trinity.....	258	9	3.5	23	1	89	88	111
Weaste.....	152	1	0.7	14	....	92	93	....
<b>Totals.....</b>	<b>3,156</b>	<b>97</b>	<b>3.1</b>	<b>245</b>	<b>15</b>	<b>78</b>	<b>75</b>	<b>155</b>

CORRESPONDING DATA FOR THE CITY FOR THE TEN YEARS 1925-1934.

City... ..	38,509	1,493	3.9	3,780	234	98	93	157
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TABLE M. 4.

SHOWING THE BIRTHS IN THE CITY OF SALFORD, DEATHS OF LEGITIMATE  
AND ILLEGITIMATE INFANTS UNDER ONE YEAR OLD AND THE  
PROPORTION OF DEATHS UNDER ONE YEAR OF AGE PER  
1,000 BIRTHS DURING THE YEARS 1915 TO 1935.

Year.	Births.			Percentage of Illegitimate Births to Total Births.	Deaths under One Year.			Proportion of Deaths under One Year per 1,000 Births.		
	Total.	Legit.	Illegit.		Total.	Legit.	Illegit.	Total.	Legit.	Illegit.
1915.....	5455	5257	198	3.6	733	692	41	134	132	207
1916 .....	5091	4894	197	3.9	587	544	43	115	112	218
1917.....	4452	4234	218	4.9	551	498	53	124	118	243
1918.....	4282	4043	239	5.5	478	436	42	111	107	175
1919.....	4435	4179	256	5.8	501	466	35	113	111	137
1920 .....	6441	6170	271	4.2	630	584	46	97	94	169
1921 .....	5993	5702	291	4.8	641	585	56	107	102	192
1922.....	5416	5169	247	4.5	599	564	35	110	109	141
1923 .....	5047	4841	206	4.1	493	458	35	98	95	170
1924 .....	4745	4569	176	3.7	579	533	46	122	117	261
1925 .....	4597	4398	199	4.3	482	452	30	105	103	151
1926 .....	4511	4349	162	3.6	464	434	30	103	100	185
1927.....	4301	4130	171	4.0	348	328	20	81	79	117
1928.....	4073	3915	158	3.9	431	408	23	106	104	146
1929.....	3903	3761	142	3.6	489	460	29	125	122	204
1930.....	3787	3640	147	3.9	323	290	33	86	80	224
1931.....	3479	3357	122	3.5	351	326	25	101	97	205
1932.....	3401	3261	140	4.1	336	321	15	99	98	107
1933.....	3316	3195	121	3.6	264	250	14	80	78	116
1934 .....	3141	3010	131	4.2	292	277	15	93	92	115
1935.....	3156	3059	97	3.1	245	230	15	78	75	155

TABLE M. 5.

SHOWING THE BIRTH-RATES, ALSO RATES OF MORTALITY FROM ALL CAUSES, FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES, AND FROM PHTHISIS, CANCER, NERVOUS DISEASES, HEART DISEASES, BRONCHITIS, PNEUMONIA AND THE INFANT MORTALITY RATE, DURING THE YEARS 1878 TO 1935.

Years.	Population.	Rates per 1,000 Population from									Deaths under One Year to 1,000 Births.	Marriage Rate.
		Births.	Deaths, All Causes.	Seven Principal Zymotic Diseases.	Phthisis.	Cancer.	Nervous Diseases.	Heart Diseases.	Bronchitis.	Pneumonia.		
1878 ....	160,277	44.7	27.1	5.4	2.7	0.5	3.5	1.1	3.6	1.8	185	17.9
1879* ..	165,899	43.0	26.7	4.2	2.9	0.4	3.7	1.2	4.3	1.8	170	15.2
1880 ....	171,727	41.4	27.9	7.4	2.7	0.4	3.2	0.9	3.4	1.9	197	16.6
1881 ....	177,760	38.8	22.5	3.0	2.5	0.5	3.1	1.1	3.6	1.6	163	16.4
1882 ....	179,855	39.7	23.7	4.0	2.4	0.4	3.6	1.1	2.8	1.7	177	16.9
Average 5 years.		41.5	25.6	4.8	2.6	0.4	3.4	1.1	3.5	1.8	178	16.6
1883 ....	181,951	37.3	23.6	3.4	2.7	0.4	3.1	1.2	3.0	1.7	171	16.1
1884* ..	184,047	38.8	24.4	4.4	2.6	0.5	2.9	1.1	2.8	1.7	184	16.1
1885 ....	186,142	37.6	23.0	3.6	2.6	0.5	2.9	1.2	3.0	1.9	174	16.1
1886 ....	188,238	38.5	24.8	4.1	2.6	0.5	2.8	1.3	3.3	1.8	197	15.3
1887 ....	190,334	36.6	25.5	4.9	2.3	0.5	3.2	1.3	2.9	2.2	195	15.4
Average 5 years.		37.8	24.3	4.1	2.6	0.5	3.0	1.2	3.0	1.9	184	15.8
1888 ....	192,429	37.1	24.8	3.9	2.3	0.5	3.0	1.1	3.0	2.1	184	15.2
1889 ....	194,525	35.9	25.1	5.3	1.9	0.6	2.5	1.3	2.6	1.9	181	16.7
1890* ..	196,621	36.1	27.7	4.4	2.2	0.5	2.0	1.3	3.4	3.8	198	17.5
1891 ....	198,775	36.3	26.0	3.4	2.2	0.5	2.2	1.1	3.7	3.0	194	18.1
1892 ....	200,833	35.8	24.6	4.6	1.9	0.6	2.0	1.2	2.6	2.9	186	16.7
Average 5 years.		36.2	25.6	4.3	2.1	0.5	2.3	1.2	3.1	2.7	189	16.8
1893 ....	203,015	34.7	24.1	4.2	1.9	0.6	2.0	1.4	2.6	2.3	211	16.2
1894 ....	205,220	34.3	21.1	3.3	1.8	0.6	2.0	1.1	1.9	2.3	174	17.1
1895 ....	207,449	35.9	25.6	5.0	1.9	0.6	2.3	1.3	2.6	2.7	229	17.4
1896* ..	209,703	35.6	23.1	4.2	1.5	0.6	2.0	1.4	2.2	2.7	200	18.1
1897 ....	211,981	35.2	23.9	5.6	1.8	0.6	2.1	1.3	2.4	2.1	219	18.6
Average 5 years.		35.1	23.6	4.5	1.8	0.6	2.1	1.3	2.3	2.4	207	17.5
1898 ....	214,284	34.9	22.8	4.2	1.8	0.8	2.2	1.2	2.2	2.2	213	18.6
1899 ....	216,612	34.1	23.9	4.4	1.8	0.6	2.3	1.4	2.5	2.7	211	18.7
1900 ....	218,965	33.3	25.3	4.1	1.8	0.6	2.4	1.7	3.2	2.8	208	17.3
1901 ....	221,212	29.2	21.7	4.2	1.8	0.7	1.9	1.5	2.3	1.9	205	17.9
1902* ..	222,233	34.0	19.3	2.7	1.7	0.7	2.0	1.5	2.2	2.1	157	18.4
Average 5 years.		33.1	22.6	3.9	1.8	0.7	2.2	1.5	2.5	2.3	199	18.2
1903 ....	223,260	32.6	19.4	2.9	1.8	0.7	1.9	1.4	2.1	1.9	168	18.1
1904 ....	224,299	32.4	21.4	4.4	2.0	0.6	1.8	1.7	2.2	1.9	193	21.5
1905 ....	225,327	31.8	17.7	2.6	1.5	0.6	1.7	1.6	1.8	1.8	148	17.8
1906 ....	226,367	31.2	19.1	3.3	1.7	0.8	1.7	1.5	2.0	1.8	162	18.6
1907 ....	227,413	30.6	18.5	2.2	1.7	0.7	1.7	1.6	2.1	2.3	140	17.9
Average 5 years.		31.7	19.2	3.1	1.7	0.7	1.8	1.6	2.0	1.9	162	18.8

TABLE M. 5—Continued.

Years.	Population.	Rates per 1,000 Population from									Deaths under One Year to 1,000 Births.	Marriage Rate
		Births.	Deaths, All Causes.	Seven Principal Zymotic Diseases.	Phthisis.	Cancer.	Nervous Diseases.	Heart Diseases.	Bronchitis.	Pneumonia.		
1908* ..	228,463	31.2	18.7	3.2	1.6	0.7	1.6	1.4	1.9	1.7	153	15.5
1909 ....	229,519	29.5	19.0	2.5	1.5	0.8	1.7	1.4	2.3	2.3	141	15.6
1910 ....	230,579	28.6	16.2	1.8	1.4	0.9	1.6	1.4	1.8	1.7	131	16.0
1911 ....	231,641	27.4	17.4	2.5	1.6	0.9	1.3	1.3	1.8	1.8	154	....
1912 ....	232,726	26.8	17.2	2.2	1.5	1.0	1.4	1.5	2.1	2.0	130	....
Average 5 years.		28.7	17.7	2.4	1.5	0.9	1.5	1.4	2.0	1.9	142	....
1913* ..	233,849	27.0	16.3	1.9	1.4	1.0	1.4	1.8	1.8	1.7	139	....
1914 ....	234,975	26.9	17.1	1.9	1.6	1.1	1.4	1.8	1.8	1.8	126	....
1915 ....	219,979†	24.8	19.1	2.8	1.7	1.1	1.4	1.6	2.3	1.9	134	....
1916 ....	214,229†	21.8	15.8	1.2	1.6	1.0	1.3	1.3	1.9	1.5	115	....
1917 ....	211,373†	18.9	16.0	1.6	1.5	1.2	1.4	1.3	2.0	1.4	124	....
Average 5 years.		24.3	16.8	1.9	1.6	1.0	1.4	1.6	2.0	1.7	128	....
1918 ....	209,274†	18.3	18.0	1.0	1.6	1.1	1.2	1.1	2.3	1.9	111	....
1919 ....	226,225†	18.8	15.8	0.8	1.2	1.1	1.1	1.1	2.4	1.5	113	....
1920 ....	235,239	27.3	13.7	0.9	1.2	1.0	1.0	1.0	1.8	1.1	98	....
1921* ..	239,100	25.2	13.9	1.1	1.3	1.0	1.0	1.2	1.7	1.5	106	....
1922 ....	240,700	22.1	14.6	1.3	1.3	1.1	0.9	1.1	1.9	1.7	110	....
Average 5 years.		22.3	15.2	1.0	1.3	1.0	1.0	1.1	2.0	1.5	108	....
1923 ....	241,600	20.9	13.5	0.8	1.3	1.2	0.9	1.1	1.6	1.5	98	....
1924 ....	243,700	19.5	14.5	1.3	1.2	1.3	0.7	1.0	1.8	1.6	122	....
1925 ....	244,700	18.8	13.9	1.0	1.3	1.2	0.8	1.0	1.8	1.3	105	....
1926 ....	247,400	18.2	12.4	0.7	1.3	1.3	0.9	1.0	1.6	1.1	103	....
1927* ..	247,600	17.3	13.9	0.7	1.4	1.3	1.1	1.5	1.5	1.3	81	....
Average 5 years.		18.9	13.6	0.9	1.3	1.3	0.9	1.1	1.7	1.4	102	....
1928 ....	241,500	16.9	13.3	0.8	1.2	1.3	0.8	1.3	1.4	1.2	106	....
1929 ....	235,600	16.6	15.4	1.5	1.2	1.3	0.9	1.1	2.2	1.6	125	....
1930 ....	230,100	16.5	13.3	0.9	1.2	1.4	0.8	1.3	1.6	1.1	86	....
1931 ....	225,900	15.4	14.2	0.6	1.2	1.4	0.8	1.4	1.8	1.4	101	....
1932 ....	220,300	15.4	13.2	0.6	1.0	1.7	0.9	1.8	1.1	1.1	99	....
Average 5 years.		16.2	13.9	0.9	1.2	1.4	0.8	1.4	1.6	1.3	103	....
1933 ....	217,000	15.3	13.9	0.3	1.1	1.5	0.9	2.1	1.2	1.2	80	....
1934 ....	213,850	14.7	13.6	0.6	0.9	1.8	0.9	2.5	0.8	1.1	93	....
1935 ....	210,000	15.0	13.0	0.2	0.9	1.6	0.9	2.7	0.8	1.1	78	....

\* In the years 1879, 1884, 1890, 1896, 1902, 1908, 1913, 1921, and 1927 the facts are those registered in 53 instead of 52 weeks; corrections have therefore been made in calculating the rates. † Civil population.

## SECTION II.

# General Work of the Health Department.

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### (A) SANITARY CIRCUMSTANCES AND SANITARY ADMINISTRATION OF THE DISTRICT.

#### Natural and Social Conditions of the District.

Salford is situated in the south-east of Lancashire and is partially divided from Manchester by the River Irwell. The older portion of the City lies along the right bank of the river, and the ground rises gradually from an elevation of 85 feet above sea level to about 250 feet, the mean elevation being 140 feet.

The area of the City of Salford is 5,202 acres. The subsoil consists principally of clay interspersed with sand and gravel, with occasional patches of red sandstone.

The population is largely industrial; a considerable portion of the City is occupied by cotton factories and engineering works, with collieries on the outskirts.

The principal Docks and a portion of the Manchester Ship Canal are situated in Salford.

There is no special influence of any particular occupation on the public health of the area.

Owing to the industrial character of the City, and the close proximity of a number of other industrial towns, the atmosphere of Salford is heavily smoke polluted. This pollution contains an excessive proportion of tarry substances given off from the burning of raw coal in domestic grates. Generally speaking, the rainfall is excessive and the atmosphere humid. Owing to the pollution of the atmosphere and the excess of cloud, there is a deficiency of sunshine.

#### Salford Local Acts and Orders.

Charter of Incorporation for the Borough of Salford granted 16th April, 1844.

Order in Council, dated 14th November, 1854, vesting powers in the Town Council of Salford for providing requisite places of burial for the inhabitants of



the Townships of Salford, Pendleton, and Broughton, and part of the Township of Pendlebury, under the provisions of the Burial Act, 1854.

20 and 21 Vict. cap. cxxxii.

The Salford Borough Act, 1857.

25 and 26 Vict. cap. ccv.

The Salford Improvement Act, 1862.

30 Vict. cap. lviii.

The Salford Improvement Act, 1867.

33 and 34 Vict. cap. cxxix.

The Salford Improvement Act, 1870.

34 and 35 Vict. cap. cx.

The Salford Improvement Act, 1871.

38 and 39 Vict. cap. ci.

The Salford Tramways and Improvement Act, 1875.

45 and 46 Vict. cap. xevii.

Provisional Order relating to the Borough of Salford confirmed by the Local Government Board's Provisional Order Confirmation (No 8) Act, 1882.

Order dated 20th December, 1882 and made by the Local Government Board under the provisions of "The Divided Parishes and Poor Law Amendment Act," 1876, as amended and extended by the Poor Law Act, 1879, amalgamating a detached part of the Township of Pendlebury with the Township of Pendleton.

48 and 49 Vict. cap. cii.

The Salford Corporation Tramways Order, 1885, confirmed by the Tramways Orders Confirmation (No. 2) Act, 1885.

49 and 50 Vict. cap. xxv.

The Salford Corporation Act, 1886.

53 and 54 Vict. cap. clxxxvii.

The Salford Electric Lighting Order, 1890, confirmed by the Electric Lighting Orders Confirmation (No. 2) Act, 1890.

54 Vict. cap. xiv.

The Salford Corporation Act, 1891.

54 and 55 Vict. cap. ccxi.

Provisional Order relating to the Borough of Salford, confirmed by the Local Government Board's Provisional Orders Confirmation (No 14) Act, 1891.

54 and 55 Vict. cap. cexiii.

Provisional Order relating to the Borough of Salford confirmed by the Local Government Board's Provisional Orders Confirmation (Housing of Working Classes) Act, 1891.

55 and 56 Vict. cap. ccxxiii.

Provisional Order relating to the Borough of Salford confirmed by the Local Government Board's Provisional Orders Confirmation (No. 12) Act, 1892.

56 Vict. cap. xxxi.

The Salford Improvement Act, 1893.

60 and 61 Vict. cap. cclv.

The Salford Corporation Act, 1897.

Order of the Local Government Board, dated 11th September, 1897, conferring on the Corporation certain powers with respect to the acquisition by agreement of rights of way, and certain powers, duties, and liabilities with respect to any charity held wholly or partly for the benefit of the said Townships.

61 and 62 Vict. cap. ccxii.

The Salford Order, 1898, confirmed by the L.G.B. Provisional Orders Confirmation (No. 13) Act, 1898.

An Order, dated 2nd March, 1899, and made by the Local Government Board under the provisions of the Housing of the Working Classes Act, 1890, modifying an improvement scheme relating to the Borough of Salford.

62 and 63 Vict. cap. ccxlv.

The Salford Corporation Act, 1899.

63 and 64 Vict. cap. ccxx.

The Salford Corporation Act, 1900.

1 Edw. VII. cap. ccxxii.

The Salford Corporation Act, 1901.

2 Edw. VII. cap. cxlviii.

The Salford Corporation Act, 1902.

3 Edw. VII. cap. ccxxxvi.

The Salford Corporation Act, 1903.

Order in Council dated 27th March, 1905, directing that none but persons duly licensed shall let Lodgings to Seamen in the Borough of Salford.

6 Edw. VII. cap. ci.

The Salford Order, 1906, confirmed by the L.G.B. Provisional Orders Confirmation (No. 2) Act, 1906.

8 Edw. VII. cap. cxlvi.

The Salford Order, 1908, confirmed by L.G.B. Provisional Orders Confirmation (No. 6) Act, 1908.

2 and 3 Geo. V. cap. cxxxvi.

The Salford Order, 1912, confirmed by L.G.B. Provisional Orders Confirmation (No. 10) Act, 1912.

Order of Local Government Board, dated 5th December, 1917 (Venereal Diseases (Anglesey &c.) Order, 1917).

The Salford Corporation Gas (Standard of Calorific Power) Order, 1918.

The Salford (Union of Townships) Order, 1918.

10 and 11 Geo. V. cap. cxlviii.

The Salford Corporation Act, 1920.

Consent Order of Minister of Health, dated 9th February, 1921, to the Creation and Issue of Stock.

Confirming Order of Minister of Health dated 7th April, 1921, under Section 112 of the Public Health Act, 1875, as amended by Section 51 of the Public Health Acts Amendment Act, 1907, declaring that certain trades be Offensive Trades.

Order of Minister of Health, dated 18th July, 1921, confirming Scheme for the equation and consolidation of loans under the Salford Corporation Acts, 1902 and 1920.

Order of the Council, dated 3rd August, 1921, as to Polling Districts and Polling Places.

Order in Council, dated 10th August, 1921, approving Scheme determining the the Boundaries of the Wards of the Borough and apportioning the Councillors.

12 and 13 Geo. V. cap. xli.

The Salford Order, 1922, confirmed by the Ministry of Health Provisional Orders Confirmation (No. 5) Act, 1922.

The Salford Electricity Special Order, 1923.

Order of the Council, dated 3rd September, 1924, altering the boundaries of certain Polling Districts.

Regulations dated 13th May, 1925, made by the Minister of Transport for regulating the use of Electrical Power on the Salford and District, Eccles, Prestwich and Whitefield Tramways, and other matters.



Order of the Council, dated 1st July, 1925, for the re-division of a portion of the constituency of North Salford and the appointment of polling places.

15 and 16 Geo. V. cap. lxxvii.

The Salford Order, 1925, confirmed by Salford Provisional Order Confirmation Act, 1925.

The County Borough of Salford Roads (Restriction) Order, 1926.

Charter, dated 21st April, 1926, appointing Salford a City.

The Salford Gas Order, 1926.

17 and 18 Geo. V. cap. xcix.

The Salford Corporation Act, 1927.

City of Salford (Springfield Terrace Area Improvement Scheme) Order, 1928.

The Salford Gas (Charges) Order, 1928.

19 and 20 Geo. V. cap. xxxix.

The Salford Corporation Act, 1929.

20 and 21 Geo. V. cap. cxxxvi.

The Salford Order, 1930, confirmed by Salford Provisional Order Confirmation Act, 1930.

The City and County Borough of Salford (formerly County Borough of Salford) Roads (Restriction) Amendment Order, 1930.

The Cities of Manchester and Salford (Traffic Regulation) Order, 1932.

23 and 24 Geo. V. cap.

The Salford Corporation Act, 1933.

The Salford Stock Order, 1933.

Order of the Secretary of State, dated 20th July, 1934, as to Superannuation of Justices' Clerk and Staff.

The Salford Registration Scheme, 1934, as to Registration of Births, Marriages and Deaths.

#### **Enactments Adopted by the Council and Applied by Order.**

The Baths and Washhouses Acts. Adopted 4th October, 1876.

Infectious Disease (Notification) Act, 1889. Adopted 5th February, 1890.

Infectious Disease (Prevention) Act, 1890 (except secs. 14 and 19). Adopted 7th January, 1891.

Public Health Acts, Amendment Act, 1890, Parts II., III. (Sec. 19 and 23, amended by S.C.A., 1920), IV. and V. Adopted 7th January, 1891.

Museums and Gymnasiums Act, 1891. Adopted 7th February, 1894.

Public Libraries Act, 1892. Adopted on poll of Ratepayers, reported to Council, 5th October, 1892.

Private Street Works Act, 1892. Adopted 4th April, 1894.

Notification of Births Act, 1907. Adopted 7th January, 1914.

Public Health Acts Amendment Act, 1907 :

Section 19 (urgent repairs to private streets). Order of Minister of Health, dated 14th April, 1921.

Sections 23 (new buildings), 27 (temporary buildings), 33 (exemption of buildings), and 76 (parks and pleasure gardens). Order of Local Government Board, dated 22nd April, 1914.

Section 25 (paving of yards, etc.) and 94 (licensing of pleasure boats). Order of Minister of Health, dated 26th January, 1933.

Section 47 (public conveniences and lavatories). Order of Local Government Board, dated 28th August, 1909.

Section 51 (power to declare a business to be an offensive business). Order of Minister of Health, dated 4th December, 1920.

Section 85 (registries for servants). Order of Secretary of State, dated 12th September, 1923.

Section 95 (purchase of lands). Order of Local Government Board, dated 27th October, 1908.

Part V. (except Section 69). (Common lodging houses). Order of Local Government Board, dated 28th August, 1909.

Local Government and other Officers' Superannuation Act, 1922. Adopted as from 1st April, 1924.

Public Health Act, 1925 :

Sections 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25, 26, 29, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42. Adopted as from 1st February, 1933.

#### **Sanitary Circumstances.**

**WATER.**—The water supply is obtained from the Manchester Corporation's reservoirs at Longdendale Valley. It is ample in quantity and excellent in quality.

**RIVERS AND STREAMS.**—The question of river pollution is in the hands of the River Irwell Conservancy Committee.

#### **Drainage and Sewerage.**

The drains of the District are satisfactory. Salford sewage is conveyed to the Sewage Works at Weaste by a combined system of Sewers. The sewage is treated with Lime and Copperas, after which it is passed through

settling tanks, and thence through aerating filter-beds and humus tanks. The effluent from the humus tanks is discharged into the Manchester Ship Canal and the residual sludge carried out to sea by steamer.

**PUBLIC CLEANSING.**—The removal and disposal of house refuse is under the authority of the Lighting and Cleansing Committee of the Corporation.

### PUBLIC CLEANSING.

No alteration in the method of disposing of dry house refuse in Salford took place during 1935, as compared with 1934. I am indebted to the Director of Public Cleansing for the following particulars as to the method of collection and disposal of refuse, etc., in Salford :—

- |   |   |
|---|---|
| (a) The method of collecting dry house refuse.                        | Weekly collection in dustless loading vehicles from galvanised standard ashbins.  |
| (b) The method of collecting refuse from earth closets and privies.   | No privy ashpits. The number of excreta pails is negligible. The collection of excreta, in two-wheeled tanks, is made during the midnight hours, and taken direct to the Chief Dépôt of the Cleansing Department. |
| (c) The method of disposing of dry house refuse.                      | Strictly under Controlled Tipping methods as laid down by the Ministry of Health, and also by incineration at the Chief Dépôt of the Cleansing Department.  |
| (d) The method of disposing of refuse from earth closets and privies. | (See (b)).  |

### Sanitary Inspection of District.

**STAFF.**—The staff employed in this connection consists of the Chief Inspector, a Deputy Chief Inspector, eleven Assistant Inspectors, and one Lady Inspector.

This is an increase of one Assistant Inspector from last year whom it became necessary to appoint owing to the transference of the responsibility for the administration of the Shops Acts from the Watch Committee to the Health Committee.

The systematic inspection of the City was conducted during the year 1935 on the same lines as in previous years. The result of the inspections may be gathered from a perusal of the "Register of Work Done," which is to be found at the end of this section of the report. It shows that the number of complaints received at the office of the Department was 6,460, as compared with 5,779 received in 1934, also that 9,809 dwellinghouses were inspected during the year. The details of each section of the work will be found under the special heading.

TABLE G. 1.

## COMMON LODGING HOUSES, 1935.

	Wards.			
	Crescent.	St. Paul's.	Trinity.	Total.
Number on Register.....	6	1	4	11
Number added to Register in 1935.....	....	....	....	....
Number removed from Register in 1935.....	....	....	2	2
Number of Rooms.....	53	6	23	82
„    Beds.....	251	25	409	685
Average Number occupied each night—Males.	88	16	295	399
Females.	....	....	....	....
Notices served on Landlords.....	5	....	3	8
„    „    Keepers.....	....	....	....	....
Number of Day Inspections.....	159	26	76	261
„    Night Inspections.....	11	2	4	17

## Common Lodging Houses.

There were 11 Common Lodging Houses on the register during the year, including Salford House in Bloom Street; six are in the Crescent Ward, four in Trinity, and one in St. Paul's Wards. These houses contain 82 rooms, with 685 beds. The average number of beds occupied per night was 399 for males and none for females. Two hundred and sixty-one inspections were made during the day time and 17 at night.

The addresses of and particulars relating to these lodging houses are as follows :

Address.	Accommodation. Sleeping Rooms.	Lodgers.	Total number of lodgers who could be accom- modated during the year.	Total number of lodgers accom- modated during the year.
17, Bolton Street.....	5	49	17,885	8,977
61, Bury Street.....	7	33	12,045	6,018
41A, Gravel Lane.....	5	42	15,330	4,264
" Salford House," Bloom Street	6	285	104,025	88,185
21, East Ordsall Lane .....	2	16	5,840	1,562
1 and 1A, Park Place.....	24	125	45,625	15,287
2, Park Place.....	13	25	9,125	7,207
3, Park Place.....	4	36	13,140	2,237
13, Windsor.....	4	15	5,475	1,080
2, Corns Street.....	6	34	12,410	4,774
2, West High Street.....	6	25	9,125	5,629

The total number of lodgers who could be accommodated during the year, in all the houses, was 250,025, and the total number actually accommodated was 145,220, a difference of 104,805.

Of the 685 beds, an average of 399 was occupied each night, leaving an average of 286 beds empty.

One house No. 41A, Gravel Lane, was only occupied part of the year, the house being discontinued as a lodging house in August of last year. The house 32/34, Chapel Street, which was on the register during the previous year was closed down at the end of 1934.

One house in Crescent Ward changed hands owing to the keeper having died.

The above figures show that although the lodging houses as a whole (excluding the Corporation's own institution—" Salford House ") were occupied to only 39.1 per cent. of their full capacity, " Salford House " itself was occupied to the extent of 84.8 per cent. of its total accommodation, and this in spite of the fact that its charges are about 25 per cent. higher than those obtaining in ordinary lodging houses.

These lodging houses have been kept in good and clean condition during the year, and the Byelaws have been observed.

#### Houses Sub-let in Lodgings.

There are 398 houses let in apartments in the City; these contain 2,231 rooms. Forty houses were registered during the year and forty-three discontinued.

The registration of these houses gives us power to inspect them at any time. They have been inspected from time to time, and they have received 1,114 inspections in the day time and 625 at night.

Throughout the year the District Inspectors have given much attention to the question of overcrowding as regards many of these houses.

There were 217 infringements of the Byelaws; 57 of these were for staircases and landings not being artificially lit at night, 25 for rooms being overcrowded, 66 for rooms requiring cleansing and re-decorating, 11 for no proper washing accommodation for clothes, 3 for insufficient water-closet accommodation, 38 for there being no means provided for the preparation, cooking or storage of food, 2 for dirty rooms, and 15 for accumulations of refuse, etc.

By the end of the year 160 of these infringements had been rectified.

### Seamen's Lodging Houses.

There were eight Seamen's Lodging Houses in the City on the Register during the year, containing 32 rooms and 94 beds. There have been eight applications for renewals and new licences. No. 69, Monmouth Street, and 131, Trafford Road were discontinued as Seamen's Lodging Houses. One house 78, Monmouth Street was added to the Register during the year.

The Byelaws in force regulating these houses have been carried out, and the houses generally kept in good and clean condition. Forty-seven visits have been made during the day time and 14 at night.

The addresses of and particulars relating to these houses are as follows:—

Address.	Accommodation. Sleeping Rooms.	Lodgers.
131, Trafford Road.....	4	17
69, Monmouth Street.....	6	12
53, Trafford Road .....	5	18
68, Monmouth Street.....	4	8
78, Goodiers Lane.....	4	14
61, Trafford Road.....	3	12
178, West Park Street.....	3	7
78, Monmouth Street.....	3	6

The keepers of these houses are not required to submit a Return of the number of Seamen sleeping on the premises, but it is the general impression from the visits made by the Inspectors that these houses are not used to the fullest extent. This is no doubt due to the slackness of trade in the shipping business.



**Workshops.**

At the end of the year there were 876 workshops on the register. These have been regularly inspected by the Lady Inspector of Workshops and by the District Inspectors, the Lady Inspector visiting those workshops where females are employed and the District Inspectors visiting those premises where males only are employed.

One hundred and seventy-four defects were found in the workshops, the particulars being given in Table B. The chief defect was want of cleanliness both in the workshops and bakehouses, which was found in 82 cases and 92 cases respectively. Thirty-two notices were served, and in other cases the tenants were cautioned and the defects remedied.

*Re* OUTWORKERS.—The women outworkers' premises are visited by the Lady Inspector of Workshops, and those of the men by the District Inspectors.

During the year 137 visits have been paid.

During this year the Lady Inspector of Workshops has inspected 686 Fish and Chip Restaurants, where women are employed, to ascertain the conditions as to cleanliness and sanitation.

A number of these premises are still being found where the yard space has been enclosed, thereby preventing free ventilation to the sanitary accommodation. Where these have been found, the tenants have been warned, and the structures removed: 5 notices were served for other defects.

**FACTORIES, WORKSHOPS, WORKPLACES AND HOME-WORK.****A.—Inspection.**

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS  
DURING THE YEAR 1935.

Premises. (1)	Number of		
	Inspections. (2)	Written Notices. (3)	Prosecutions (4)
Factories..... (Including Factory Laundries)	26	17	...
Workshops..... (Including Workshop Laundries)	1900	31	....
Workplaces..... (Other than Outworkers' premises included in Part 3 of this Report)	686	5	...
<b>Total</b> .....	<b>2612</b>	<b>53</b>	...

## B.—Defects Found.

Premises.  (1)	Number of Defects.			
	Found. (2)	Remedied. (3)	Referred to H.M. Inspector. (4)	Number of Prosecutions. (5)
<i>Nuisances under the Public Health Act *</i>				
Want of cleanliness.....	139	139	40	....
Want of ventilation.....	1	....	1	....
Overcrowding.....	....	....	....	....
Want of drainage of floors.....	2	4	1	....
Other nuisances.....	5	6	....	....
Sanitary accommodation {	insufficient.....	8	8	10
	unsuitable or defective .....	14	14	14
	not separate for sexes .....	4	4	4
<i>Offences under the Factory and Workshops Act—</i>				
Illegal occupation of underground bakehouse (s 101).....	1	1	....	...
Breach of special sanitary requirements for bake- houses (ss. 97 to 100).....	....	....	....	....
Other offences (excluding offences relating to outwork which are included in Part 3 of this Report).....	....	....	....	....
Total.....	174	176	70	....

\* Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act as remediable under the Public Health Acts.



NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.							OUTWORK IN UN- WHOLESOME PREMISES, SECTION 108.					OUTWORK IN UN- INFECTED PREMISES, SECTIONS 109, 110.						
	Lists received from Employers.				Sending once in the year.			Number of Addresses of Outworkers received from other Authorities.	Number of Addresses of Outworkers forwarded to other Authorities.	Notices served on Occupiers as to keeping or sending lists.	Prosecutions.		Number of Inspections of Outworkers' premises.	Instances.	Notices served.	Prosecutions.	Instances.	Order made, S. 110.	Prosecution, SS 109, 110.
	Sending twice in the year.		Outworkers.		Outworkers.		Failing to keep or permit inspection of lists.				Failing to send lists.								
	Lists.	Con- tractors.	Work- people.	Lists.	Con- tractors.	Work- people.													
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
• Wearing Apparel—																			
1. Making, &c.....	20	22	150	2	1	2	129	126	...	...	...	137	...	...	...	...	...	...	...
2. Cleaning and washing .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lace, lace curtains and nets.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Artificial flowers.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nets, other than wire nets.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tents.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sacks.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Furniture and upholstery.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fur pulling.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Feather sorting.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umbrellas, &c.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carding, &c., of buttons, &c.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Paper bags and boxes.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Basket making.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Brush making.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Racquet and tennis balls.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stuffed toys.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
File making.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Electro plate.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cables and chains.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cart gear.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Locks, latches and keys.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anchors and grapnels.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pea picking.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total.....	20	22	150	2	1	2	129	126	...	...	...	137	...	...	...	...	...	...	...

\* List of Industries as prescribed by Home Office.

**D.—Registered Workshops.**

Workshops on the Register (s. 131) at the end of the year. (1)	Number. (2)
Tenement Workshops.....	8
Domestic Workshops.....	211
Laundries.....	10
Workshop Bakehouses.....	282
Other Workshops.....	292
Total number of Workshops on Register.....	803

**E.—Other Matters.**

Class. (1)	Number. (2)
Matters notified to H.M. Inspector of Factories—	
Failure to affix abstract of the Factory and Workshop Act (s. 133)....	12
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5). (Notified by H.M. Inspector. Reports (of action taken) sent to H.M. Inspector.)	43
Other.....	42
Underground Bakehouses (s. 101)—	
Certificates granted during the year.....	....
In use at the end of the year.....	....

\* Including reports of action taken in cases notified in previous year

**F.—Additional Sanitation for Retail Bakehouses, Sections 97—102.**

Number of such premises in the district, 267.

Note as to their sanitary condition. Ground floor bakehouses—Good.

Action taken as to retail bakehouses in 1935, eight notices served.

Action taken.	No. of Defects found.	Notices served.	Legal Pro- ceedings.	Defects remedied	Remarks.
As to Closets, &c., Sec. 97.....	3	....	....	3	
As to Water Cisterns, Sec. 97 ....	....	....	....	....	
As to Drain Openings, Sec. 97....	....	....	....	....	
As to Limewashing, &c., Sec. 97	74	....	....	74	
As to Sleeping Places, Sec. 100.	....	....	....	....	

Any proceedings under Section 98 as to retail bakehouses sanitarily unfit, Nil.

BAKEHOUSES, 1935.

Registered.....	267
Added to Register .....	23
Discontinued.....	28
Changed Hands.....	19
Number of Underground Bakehouses Certified by Authority ..	Nil.
Total Number of Ovens.....	345
Employees - Males.....	268
Females .....	499
Notices Served.....	8

Smoke Nuisance.

Particulars as to smoke nuisance caused by firms during the year 1935 and dealt with by the Health Committee :—

Twelve Notices were issued under the Public Health Act.

During the year 3,563 smoke observations have been made as against 3,495 in the year 1934 and 3,615 in the year 1933.

One hundred and eleven stokers and others were cautioned by the Inspector for negligence in firing the furnaces under their charge, at the same time 21 firms were reported to and dealt with by the Health Committee, also 21 cautionary Notices were issued to firms with a table of smoke observations taken from their chimneys.

Several chimneys have been raised during the year in connection with small workshops.

TABLE SHOWING THE NUMBER OF HALF-HOURLY OBSERVATIONS TAKEN  
DURING THE YEAR 1935.

Minutes of Black Smoke emitted in half-an-hour.	No. of Observations Taken.	Percentage to Total.
No Black Smoke.....	2,823	79.3
One Minute.....	717	20.1
Two Minutes.....	8	0.2
Three Minutes.....	5	0.1
Over Three Minutes.....	10	0.3
Total Observations .....	3,563	100.0

**Manure Receptacles, and Removal of Manure and other Offensive Matter.**

The Byelaws with respect to receptacles for manure and the weekly removal of the manure, filth, or other offensive or noxious matter, which came into operation towards the end of 1909, have been enforced during the past year, and special attention has been paid to stable yards where manure quickly accumulates.

The Byelaws as regards the regular removal of manure have been well observed.

**Canal Boats Acts.**

Number of canal boats inspected.....	145
Number of canal boats conforming to Acts.....	141
Number of canal boats with one or more infringements.....	4
Total number of infringements.....	6
Registration.....	—
Absence of certificates.....	2
Dilapidation of certificate.....	1
Marking.....	1
Overcrowding .....	—
Separation of sexes.....	—
Cleanliness.....	—
Ventilation.....	—
Ventilators obstructed.....	—
Painting.....	—
Provision of water vessel.....	1
Water vessels broken.....	—
Removal of bilge water.....	—
Boats defective and leaking.....	—
Dilapidation.....	—
Stoves defective.....	—
Stove pipes defective.....	1
Pumps defective.....	—
Admittance of Inspector.....	—
Notification of infectious disease.....	—
Certificates not identifying owners.....	—
Loading manure without tight bulkheads .....	—
Number of notices served.....	2
Other steps to secure compliance—Letters written to owners.....	2
Detention of boats for cleansing and disinfection.....	—
Legal proceedings taken.....	—
Number of boats on register: Not a Registration Authority.	
Canal boats registered to carry (number of persons).....	758
Men found on the boats.....	272
Women found on the boats.....	13
Children under 12 years found on the boats.....	3

**Drainage Inspection.**

The testing and examination of all existing drainage is carried out by this Department. Two Inspectors and four labourers are kept continually at work examining drainage, and the following table gives the detailed results of their labours :—

Number of tests made.....	684
„ applications from householders.....	9
„ houses affected by the tests.....	710
„ notices and reports issued.....	601
„ notices and reports complied with.....	575
„ drain inlets opened and cleared.....	1,474

**INSANITARY CONDITIONS FOUND.****Defects.**

Number of drains wholly and partly choked.....	769
„ drains defectively constructed.....	239
„ gully traps badly laid.....	37
„ drains defectively trapped.....	26
„ waste pipes defectively trapped or connected to drains	43
„ downspouts connected to drains.....	54
„ soil pipes with leaking joints or defectively ventilated.	61
„ defective water-closets.....	140
Total defects.....	1,369

**RECONSTRUCTION OF DRAINS AND THE CONSTRUCTION OF NEW DRAINS.**

Number of tests applied.....	688
„ houses affected.....	658
„ passage main drains affected.....	12

**MODE WHEEL AMBULANCE AND DISINFECTING STATION.**

The Ambulance and Disinfecting Station situated in Mode Wheel Road is under the control of the Medical Officer of Health. The Station is used for the following purposes :—

(a) The disinfecting of bedding, clothing, etc., from the homes of persons suffering from infectious diseases by means of high-pressure steam disinfection.

(b) As a dépôt for the disinfectors employed in disinfecting houses, schools, and public institutions in which a case of infectious disease has occurred.

(c) As a station for the bathing of verminous persons and the disinfection of their clothing.

(d) The bathing of persons suffering from scabies (particularly school children), and the disinfection of their clothing.

(e) The bathing of midwives who have been in contact with cases of puerperal fever, and the disinfection of their clothing and instruments.

(f) As a garage for the three motor ambulances required to take persons to and from Hospital and the three motor vans used to collect and deliver bedding, etc., before and after disinfection, and in connection with the cleansing of conveniences. The Station is also used as a repair dépôt for the whole of the motor vehicles used in the Department.

The Staff employed at the Station is as follows :—

Foreman.  
Caretaker.  
Motor Mechanic.  
Four Disinfectors.  
Four Drivers.

The following is a summary of the work done at the Mode Wheel Disinfecting Station during 1935 :—

#### AMBULANCES.

	Salford Cases.	Out-District Cases.	Total Cases.
Number of journeys removing patients to Hospital.....	1,525	414	1,939
Number of journeys removing patients from Hospital to their homes.....	555	—	555
Number of houses visited by ambulances removing bedding for disinfection.....	643	23	666

#### VANS.

Number of houses visited by vans returning bedding after disinfection.....	1,716	135	1,851
--	-------	-----	-------

In addition, 659 journeys to Hospital for purposes other than removal of patients were made by motor vehicles, and 39 journeys were made for the purpose of taking home children after operative treatment for tonsils and



adenoids. 255 journeys were made in connection with the treatment of children suffering from scabies. There were also 659 journeys for miscellaneous purposes.

## DISINFECTIONS.

Number of houses disinfected.....	1,829
„ rooms disinfected.....	5,439
„ bundles of clothing and bedding disinfected.....	6,666*
„ books disinfected.....	383
„ schools disinfected.....	6
„ hospitals disinfected (occasions).....	19
„ rooms in ships disinfected.....	5

\* Including 3,181 for Hope Hospital.

## BATHING AND DISINFECTION OF CLOTHING.

Midwives.....	18
Smallpox convalescents.....	Nil.
Verminous persons.....	Nil.
Children suffering from scabies.....	1,631

The disinfection at the Mode Wheel Disinfecting Station of bedding and clothing from Hope Hospital was continued during 1935.

## MOTOR AMBULANCE SERVICES.

The following is a summary of the Motor Ambulance Services provided in Salford :—

## (1) HEALTH DEPARTMENT—

Number of motor ambulances :—

(a) For Infectious Diseases.....	3
(b) „ Hope Hospital.....	3

(Including one semi-ambulance)

The ambulances under (a) are stationed at the Mode Wheel Disinfecting Station, Weaste, and are used principally for conveying cases of infectious disease to and from the Ladywell Sanatorium, the Nab Top Sanatorium, and the homes of Salford residents. They are also used for a similar purpose, so far as the Ladywell Sanatorium only is concerned, in the case of a number of out-districts. In addition, they are used for conveying to their homes : (a) school children who have been operated upon for the removal of tonsils and adenoids, and (b) school children suffering from scabies who have been bathed at the Mode Wheel Disinfecting Station.



The ambulances under (b) are used for the conveyance of patients only, including maternity cases to and from Hope Hospital, while the semi-ambulance is used for conveying children to and from the Culcheth Cottage Homes, and sitting-up cases.

(2) POLICE DEPARTMENT—

Number of motor ambulances..... 4

These ambulances are stationed at the Fire Station, Crescent, Salford. They are used primarily for accidents, but are also used occasionally for private cases.

I am of opinion that the ambulance facilities available in Salford are adequate.

**PROPAGANDA.**

The distribution of the periodical " Better Health " was continued during 1935 ; this magazine, published at monthly intervals, is distributed free of charge. Copies are supplied to all the large firms in the City for distribution to their employees and, by arrangement with the Education Department, each School Teacher is provided with a copy.

The displays which have been given in the windows on the ground floor of the Health Offices, in Regent Road, for seven years, were continued during 1935.

**Sanitary Conveniences.**

There are 21 conveniences for Males and three for Females in the City, under the control of the Health Committee, and also one public convenience for Males, and one for Females under the joint control of the Health Committee and Parks Committee, namely :

SITUATION.	MALES.				FEMALES.		
	Urinal Stalls	Water Closets	Wash Basins	Attendant	Water Closets	Wash Basins	Attendant
Trinity Market.....	6	3	3	1	3	3	1
Trafford Road (Eccles New Road corner).....	15	4	4	1	....	....	....
Trafford Road (Ordsall Park)	12	4	6	1	....	....	....
Church Street (near the corner of Broad Street)....	10	2	3	1	3	3	1
Cross Lane.....	...	....	....	....	4	4	1
Oldfield Road (Corner of Chapel Street).....	6	....	....	....	....	....	....
Liverpool Street.....	4	....	....	....	....	....	....
Bolton Road (Junction of Claremont Road).....	6	....	....	....	....	....	....
Broughton Road.....	16	....	....	....	....	....	....
Windsor Bridge.....	6	....	....	....	....	....	....
Blucher Street.....	3	....	....	....	....	....	....
Stevenson Street.....	3	....	....	....	....	....	....
Park Lane.....	5	....	....	....	....	....	....
Broad Street.....	3	....	....	....	....	....	....
Greengate Arch.....	6	....	....	....	....	....	....
Eccles New Road.....	6	....	....	....	....	....	..
Broughton Bridge.....	8	....	....	...	....	...	...
Frederick Road.....	4	....	....	....	....	....	...
Moor Lane.....	6	....	....	...	....	....	....
Cross Lane.....	5	....	....	....	....	....	....
Albert Park.....	6	....	....	....	....	....	....
Crescent, near Victoria Arch.	6	....	....	....	....	....	....
Mandley Park .....	....	3	....	...	3	....	....

One new public convenience for the use of Males, and one for Females, has been erected in Mandley Park with access from Great Cheetham Street and Bristol Street. These comprise three water closets for Females and three water closets and four urinal stalls for Males.

Two new conveniences for Males and Females are in course of construction in Charlestown Recreation Ground. They will be opened during 1936.

TABLE C 3.

CASES HEARD BEFORE THE MAGISTRATES DURING 1935.

Particulars of Offence.	No. of Cases.	Decision of Magistrates.	Total Fines (without costs).
For selling a solution of Iodine not of the nature, substance and quality of the article demanded.	3	3 Fined 5s. each	£ s. d. 0 15 0
For aiding and abetting, counselling and procuring in the above offence.	3	3 Fined 5s. each.	0 15 0
For applying a false label to certain goods.	3	3 Fined 5s. each and £7 7s. od. costs.	0 15 0
For exposing for sale a quantity of of imported tomatoes and not having any show ticket bearing the indication of origin as required by the Merchandise Marks (Imported Goods) No. 4 Order, 1929.	1	Fined £2 and £1 1s. 0d. costs.	2 0 0
For selling as lard, an article not of the nature, substance and quality of the article demanded, the same containing 100% fat with other than lard.	3	3 Fined 10s. each and £1 1s. 0d. costs.	1 10 0
For consigning milk to a Salford Milk Dealer which on analysis was found to be deficient of 11.6% of fat.	1	Fined £3 0s. 0d. and £1 1s. 0d. costs.	3 0 0
For selling milk to which colouring matter had been added contrary to the Milk and Dairies Amendment Act, 1922.	1	Fined £1 0s. 0d. and £1 11s. 6d. costs.	1 0 0
For selling minced butcher's meat containing 400 parts per million of sulphur dioxide preservative which is prohibited by the Public Health (Preservative in Food) Regulations.	1	Fined £1 0s. 0d.	1 0 0
For killing sheep without being licensed for that purpose by the Local Authority.	1	Fined 12s. 6d. and 7s. 6d. costs.	0 12 6
For failing to use a mechanical operated stunning instrument in killing certain cattle.	1	Fined £3 0s. 0d. and 40s. costs.	3 0 0
Carried forward .....	18		£14 7 6

CASES HEARD BEFORE THE MAGISTRATES DURING 1935. *continued.*

Particulars of Offence.	No. of Cases.	Decision of Magistrates.	Total Fines (without costs).
Brought forward ... ..	18		£ 14 s. 7 d. 6
For failing to close the shop on the Weekly Half-holiday contrary to the Weekly Half-holiday Order.	2	2 Fined 10s. each and 10s. 6d. costs.	1 0 0
For selling milk containing 17% of extraneous water.	1	Fined £1 1s. 0d. costs.	—
For selling margarine without having it wrapped in a proper wrapper having the word "margarine" printed on the outside of the wrapper. For displaying a block of margarine without it being labelled as required by Section 23 of the Foods and Drugs Act.	1 ) 1 )	Fined £1 1s. 0d. costs for the 2 cases.	
For refusing to admit two Sanitary Inspectors at a Sublet House for the purpose of making a night inspection of such house.	1	Technical offence only committed. Discharged under the Probation of Offenders Act.	—
For applying a false warranty to new season's blackcurrant jam.	1	Fined 40s. and £2 2s. 0d. costs.	2 0 0
For selling new season's blackcurrant jam containing 74 parts per million of sulphites exposed as sulphur dioxide against the permitted limits of 40 parts per million by the Public Health (Preservatives in Food Regulations).	1	Dismissed on warranty.	—
For failing to comply with the requirements of Notice under the Public Health Act, 1875, to abate a nuisance arising from the damp condition of a gable wall and the skylight in the roof defective at a certain house.	1	Fined £2 2s. 0d. costs and order to abate made.	—
For failing to comply with the requirements of a Notice under the Salford Improvement Act with regard to defective eaves-gutters and downspout at a certain house.	1	Fined 40s.	2 0 0
For contravening Section 5 of the Housing Act, 1925, by failing to inscribe the name and adress of the owners in the rent book.	1	Fined 10s.	0 10 0
	29		£20 7 6

### **Shops Acts, 1912-1934.**

The administration of these Acts was transferred from the Watch Committee to the Health Committee in June, 1935.

The administration of the abovementioned Acts has been taken over by the Health Committee, and during the latter half of the year an executive officer was appointed.

The offences against the Shops Acts of 1912 and 1928 in connection with early and half-day closing are found to be mainly due either to ignorance or to the fear of unfair competition, *i.e.*, the filching of business by local competitors who disregard their responsibilities. The attitude of the great majority of shopkeepers is favourable to the proper observance of the law and a desire for its proper administration. There is a general realisation that the legislation is beneficial to both shopkeepers as well as to the assistants.

There are anomalies in connection with the selling of cigarettes and tobacco, and in connection with Sunday trading, but the latter will probably be dealt with, as a Bill dealing with this subject has passed its second reading in the House of Commons.

### **Shops Act, 1934.**

This piece of legislation is to safeguard the periods of work, meals and rest for "young persons," and to arrange for the health and comfort of shop-employees.

#### **YOUNG PERSONS.**

It is found, insofar as "young persons" are concerned, that the multiple shopkeeper has anticipated the visit of the Inspector inasmuch as the necessary Records and Regulations have been exhibited, but in other shops ignorance of a shop-employer's responsibilities is prevalent. In certain cases it is apparent that the control of the working hours is essential to protect the adolescent years of the employees. Compliance with the law is being rendered effective by systematic inspections.

#### **HEALTH AND COMFORT OF SHOP-WORKERS.**

The provision of water-closet accommodation and washing facilities is a responsibility which may be considered as long overdue, and steps are being taken to ensure that such a responsibility will be fulfilled. The lighting and ventilation of shops are being attended to and the provision of means to maintain a reasonable temperature is being given daily attention. In connection with this, one has to remember that the term "reasonable" is affected by different conditions such as the type of goods sold, the structure of the premises, whether the shop door is kept open or closed, and the type of clothing worn by the employees. Effective work is also being done in the securing of better facilities for the taking of meals.

The following particulars relate to work done by the Shops Inspector appointed by the Health Committee during 1935 :—

Visits <i>re</i> Half-day Closing... ..	1,086
Visits <i>re</i> Early Closing .....	581
Number of Warnings <i>re</i> Contraventions .....	57
Prosecutions <i>re</i> Contraventions.....	2

**Housing Conditions.**

YEAR ENDED 31ST DECEMBER, 1935.

**(a) GENERAL STATISTICS.**

Area (acres).....	5,202
Population (1935) (Registrar General's Estimate)....	210,000
Number of Houses (At 1st April, 1935).....	52,275
Number of families or separate occupiers (1935).....	—
Rateable Value (1935-1936).....	£1,133,117
Sum represented by a penny rate (Estimate).....	£4,300

**(B) HOUSING STATISTICS.****1. Inspection of dwellinghouses during the year :—**

1. (a) Total number of dwellinghouses inspected for housing defects  
(under P.H. or Housing Acts)..... 9,809
- (b) Number of inspections made for the purpose..... 30,661

2. (a) Number of dwellinghouses (included under sub-head (1)  
above) which were inspected and recorded under the Housing  
Consolidated Regulations, 1925..... Nil.
- (b) Number of inspections made for the purpose..... Nil.

3. Number of dwellinghouses found to be in a state so dangerous  
or injurious to health as to be unfit for human habitation..... Nil.

4. Number of dwellinghouses (exclusive of those referred to under  
the preceding sub-head) found not to be in all respects reasonably  
fit for human habitation..... 4,982

**2. Remedy of defects during the year without service of formal Notices :—**

- Number of defective dwellinghouses rendered fit in consequence of  
informal action by the Local Authority or their officers..... 2,606

**3. Action under Statutory Powers during the year :—****A. Proceedings under Sections 17, 18 and 23 of the Housing Act, 1930 :**

1. Number of dwellinghouses in respect of which notices were  
served requiring repairs..... Nil.
2. Number of dwellinghouses which were rendered fit after  
service of formal notices :—
  - (a) by owners..... Nil.
  - (b) by Local Authority in default of owners..... Nil



*B. Proceedings under Public Health Acts :*

1. Number of dwellinghouses in respect of which notices were served requiring defects to be remedied..... 2,344
2. Number of dwellinghouses in which defects were remedied after service of formal notices :—
  - (a) by owners..... 2,132
  - (b) by Local Authority in default of owners..... Nil.

*C. Proceedings under Sections 19 and 21 of the Housing Act, 1930 :*

1. Number of dwellinghouses in respect of which Demolition Orders were made..... Nil.
2. Number of dwellinghouses demolished in pursuance of Demolition Orders..... Nil.

*D. Proceedings under Section 20 of the Housing Act, 1930 :*

1. Number of separate tenements or underground rooms in respect of which closing orders were made..... Nil.
2. Number of separate tenements or underground rooms in respect of which closing orders were determined, the tenement or room having been rendered fit..... Nil.

*E. Proceedings under Section 3 of the Housing Act, 1925 :*

1. Number of dwellinghouses in respect of which notices were served requiring repairs..... Nil.
2. Number of dwellinghouses which were rendered fit after service of formal notices :—
  - (a) by owners..... Nil
  - (b) by Local Authority in default of owners..... Nil.
3. Number of dwellinghouses in respect of which closing orders became operative in pursuance of declarations by owners of intention to close..... Nil.

*F. Proceedings under Sections 11, 14 and 15 of the Housing Act, 1925:*

1. Number of dwellinghouses in respect of which Closing Orders were made..... Nil.
2. Number of dwellinghouses in respect of which Closing Orders were determined, the dwellinghouses having been rendered fit..... Nil.
3. Number of dwellinghouses in respect of which Demolition Orders were made..... Nil.
4. Number of dwellinghouses demolished in pursuance of Demolition Orders..... Nil.

**FITNESS OF HOUSES.**

No special difficulties have been found in action under the Public Health Acts. The property owners in general show a disposition to comply with the Notices served under these Acts.

The whole of the property in the City is supplied on the constant system with water from the Corporation mains. With the exception of a very few houses in common courts, each house is supplied with an internal water supply.

**BYELAWS.**

In general, the existing Byelaws and Local Acts are found to be adequate, and no special difficulties have been experienced in their enforcement.

**Re-Housing.**

During the year detailed inspections have been made in parts of the Green-gate District with a view to representation being made to the Council to declare certain properties as unfit for habitation. These inspections have been carried out in conjunction with the schemes formulated by Salford Housing Ltd., by means of which it is intended that they shall provide flats for over 300 families.

In addition similar detailed inspections have been made in the Regent Road District with a view to transferring families from this district to the Eccles New Road site where over 400 flats are being erected. Negotiations have been in progress for some time for the purchase of land in Duchy Road and the Somerville Estate, Bolton Road. It is the intention of the Corporation to build cottages on these sites to the number of about 500, to accommodate the families who will be displaced from other areas.

**Housing Act, 1935.**

Section 1 of the above Act makes it the duty of every Local Authority to cause an inspection of the working class houses in their district to be made with a view to ascertaining which working class dwellinghouses are overcrowded, and to prepare and submit to the Ministry of Health a report showing the result of the inspection, and of the necessary action which the Local Authority proposes to take in order to relieve overcrowding.

The general scheme recommended by the Ministry suggested a preliminary house to house survey of each working class house, directing attention to (a) whether it is empty, (b) if it is occupied what is (i) the number of families and of persons in each family, and (ii) the number of rooms occupied by each family.

This survey was commenced on 9th December, 1935. Twelve enumerators and two clerks were engaged and placed under the supervision of the Deputy Chief Inspector. It is proposed to complete this work Ward by Ward.

This survey will divide working class houses into three groups, viz. : Overcrowded, doubtfully overcrowded, and not overcrowded, according to the number of persons in each family and the number of rooms which they occupy. It will be necessary at a later date to measure the rooms of the doubtfully overcrowded

houses before placing them in the appropriate group as overcrowded or not overcrowded. The survey of the Ordsall Ward was completed by the end of the year and work was commenced in the Regent Ward.

The following dates have been fixed by the Minister for the purposes indicated :—

- (1) For the completion of inspection, 1st April, 1936.
- (2) For the submission of the Report, 1st June, 1936.
- (3) For the submission of proposals, 1st August, 1936.

**TABLE G. 2.**

NEW HOUSES ERECTED AND HOUSES DEMOLISHED IN 1935.

Wards.	Houses erected.	Houses demolished.
Kersal.....	39	.... —
Albert Park.....	3	.... —
Mandley Park.....	—	.... —
St. Matthias'.....	—	.... —
Trinity.....	—	.... —
Crescent.....	—	.... —
Regent.....	—	.... —
Ordsall Park.....	—	.... —
Docks.....	—	.... —
Charlestown.....	—	.... —
St. Thomas'.....	1	.... —
St. Paul's.....	—	.... —
Langworthy.....	—	.... —
Seedley.....	—	.... —
Weaste.....	86	.... —
Claremont.....	220	.... —
	349	.... —

All these houses have been built by private enterprise.

#### **Certificates as to Housing Conditions.**

Under the terms of the circular letter issued by the City Treasurer, with reference to the issue by the Medical Officer of Health of certificates to the effect that certain families were not living under sanitary conditions 127 applications have been made and in 94 cases certificates were issued.

TABLE G. 4.

REGISTER OF WORK DONE—YEAR ENDING DECEMBER 31ST, 1935.

No. of Complaints received.....	6460
Inspections of	
Dwellinghouses .....	9809
"     "     (under Housing, &c., Act)....	—
Visits <i>re</i> Unhealthy Areas.....	545
Schools.....	394
Factories.....	26
Canal Boats.....	145
Common Lodging-houses (Day).....	261
"     "     "     (Night).....	17
Sub-let     "     "     (Day).....	1114
"     "     "     (Night).....	624
Seamen's Lodging-houses (Day).....	47
"     "     "     (Night).....	14
Van Dwellings.....	185
Tips.....	22
Bakehouses (Day).....	622
Workshops (Day).....	794
"     (Night).....	52
Domestic Workshops.....	372
Restaurant Kitchens.....	46
Outworkers' Premises .....	137
Ice Cream Shops.....	726
"     Stalls.....	19
Fried Fish Dealers....	686
Smallpox Contacts....	—
Diphtheria Contacts.....	9
Scarlet Fever Contacts.....	34
Enteric Fever Contacts.....	—
Miscellaneous.....	5259
Laundries .....	14
Urinals— Public.....	266
Stables.....	583
<i>Re</i> Infections Diseases.....	1495
Theatres, Cinemas, &c. (Day).....	73
"     "     (Night).....	76
Shops { (Shops Act) <i>re</i> Half-Day closing..	1086
"     " <i>re</i> Early Closing.....	581



REGISTER OF WORK DONE.—*continued.*

		Dwellinghouses.....	—
		Lodging-houses.....	22
		„ Sub-let.....	2
		„ Seamen's.....	6
Limewashed	{	Bakehouses.....	361
		Workshops.....	17
		Workshops (Domestic).....	6
		Outworkers' premises.....	1
		Laundries.....	9
Newly Licensed		Common Lodging-houses.....	11
„ „		Seamen's „ .....	6
	{	Lodging-houses Sub-let.....	40
		Workshops.....	7
Newly Registered		„ (Domestic).....	—
		Bakehouses.....	23
		Second-hand Goods Stores.....	13
		Ice Cream Shops.....	18
Accumulations	{	Manure and Refuse.....	28
Removed		Stagnant Water.....	1
Manure Receptacles—New, provided.....			1
Smoke Nuisance	{	Observations taken.....	3563
		Notices served.....	12
		Cautionary Notices served .....	21
Passages and	{	Flagged.....	9
Yards		Repaired.. ..	551
		Drained .....	1
Bundles of	{	Stoved .. ..	3485
Infected Bedding and Clothing		Destroyed.....	52
Animals removed from improper situations.....			—
Overcrowding of dwellings abated.....			10
Houses repaired by owners, after Formal Notice.....			2132
„ „ „ „ „ Informal „ .....			2361
Canal Boats painted.....			—
„ defective.....			—
„ repaired.....			—



### **Destruction of Rats and Mice.**

I am indebted to the Director of Public Cleansing, Salford, for the following information, namely :—

During the year 1935 the ratcatchers made 4,391 visits to dwellinghouses, schools, shops, stores and other premises, whilst 1,552 live rats were caught.

In many cases structural repairs to property were rendered necessary due to the damage done by rats to sanitary fittings, floors, etc. These repairs were carried out by the agents and owners of the premises.

The percentage of infestation due to defective and disused drains was found to be high. The controlled tips and depôts of the department are kept under constant supervision and means are taken to prevent the aggregation of rats.

In addition to the continuous work carried out by the two ratcatchers employed by the Department, the extra efforts in connection with Rat Week included the following :—

Two weeks prior to Rat Week an advertisement was inserted in the local paper notifying the public of this effort, asking for co-operation and stating that assistance will be given free of charge. This was emphasised by an article on the destruction of rats and mice based on information supplied by this Department.

Large posters were displayed on the hoardings of the City. Handbills were distributed from house to house. The Ministry's poster was exhibited in the display window of the Health Department, on the notice boards of the Public Parks and Libraries, in the windows of shops on the main thoroughfares and on the vehicles of the Department.

Not many new complaints were received during Rat Week as the publicity given the work of rat destruction during the last few years has helped to make the activities of the Department well known ; consequently there is a steady flow of requests for assistance throughout the year.







**(C)—GENERAL PROVISION OF HEALTH SERVICES.****Hospital Services.**

The people of Salford avail themselves of the hospital accommodation provided by the Salford Corporation and of the voluntarily provided hospitals of both Salford and Manchester. The interleaved tabulation contains particulars of the hospital services available for Salford residents, distinguishing between hospitals provided by the Corporation and voluntary institutions.

**Outdoor Assistance to the Poor.**

The amount distributed by way of outdoor assistance to the poor in Salford during the year ending March 31st, 1936, was approximately £189,545.

Particulars relating to the Poor Law Medical Out-relief Districts are set out in the appended tabulation :—

**MEDICAL OUT-RELIEF DISTRICTS.**

No. of District.	Area served.	District Medical Officer.
1.	<i>District</i> —Such portion of the former Township of Salford as is comprised within the following boundary :—Commencing at a point in the River Irwell at the Salford Royal Hospital end of the Crescent, easterly along Whitecross Bank and Chapel Street, thence along St. Stephen Street, King Street, Norton Street, and Greengate to the River Irwell at the Salford Bridge ; thence to the left along the River Irwell and the pre-existing Township boundary to the point first named.	Dr. Stanley Hodgson.
2.	<i>District</i> —All that part of the former Township of Salford comprised within the following boundary :—Commencing at Windsor Bridge, and thence along the Manchester, Bury and Bolton Canal to the pre-existing boundary of the Townships of Salford and Pendleton, along such boundary through Peel Park to the River Irwell, along the River Irwell to a point nearest the Crescent, thence along the Crescent and Chapel Street to St. Stephen Street, along St. Stephen Street, King Street, Norton Street, Greengate and Chapel Street to Salford Bridge, to the right along the River Irwell to the Manchester, Bury and Bolton Canal, and along such Canal to the point first named.	Dr. Stanley Hodgson

MEDICAL OUT-RELIEF DISTRICTS—*continued.*

No. of District.	Area Served.	District Medical Officer.
3.	<i>District</i> —All that part of the former Township of Salford comprised within the following boundary, viz.:—Commencing at Regent Bridge, along the centre of Regent Road, Trafford Road, and Broadway, to the site of the old Racecourse, thence along the northern boundary of such site to the Manchester Ship Canal, thence along the said Ship Canal and the River Irwell to the point first named.	Dr. W. Saunderson.
4.	<i>District</i> —Commencing at Windsor at the point dividing the former Townships of Pendleton and Salford, thence along the pre-existing Township boundary to the Manchester, Bury and Bolton Canal, along such Canal in a south-easterly direction to the River Irwell, along the River Irwell to Regent Bridge, thence along Regent Road to Trafford Road, along Trafford Road and Broadway and the north-west side of the site of the old Racecourse to the Manchester Ship Canal, along the said Ship Canal to the boundary of the former Townships of Pendleton and Salford; and thence along such boundary to the point first named.	Dr. W. Saunderson.
5.	<i>District</i> —The whole of the former Township of Pendleton.	Dr. J. Garlick.
6.	<i>District</i> —The whole of the former Township of Broughton.	Dr. T. Waycott Chaff.

This service is administered by the Public Assistance Committee, and I am informed by the Public Assistance Officer that no changes of note in its administration have occurred during the year.

**Local Government Act, 1929.**

On 1st April, 1935, the decision of the Council, made in October of the previous year, to appropriate Hope Hospital under the Public Health Acts was put into effect. This necessitated an alteration in the administrative scheme made by the Council in 1930 so as to enable the control of Hope Hospital to be placed directly in the hands of the Health Committee.

Further consultations with representatives of Voluntary Hospitals under Section 13 of the Local Government Act, 1929, did not take place during 1935, as no additional provision for hospital accommodation was made during the year.

### Vaccination.

No primary vaccinations or re-vaccinations were performed by the Medical Officer of Health under the Public Health (Smallpox Prevention) Regulations, 1917, during 1935.

The Public Vaccinators for Salford and their districts are as follows : -

Description.	District.	Public Vaccinator
Salford (No. 1) District.	Such part of the Township of Salford as is comprised within the following boundary, namely : Commencing at the former Township boundary between Pendleton and Salford at Broad Street ; along Windsor and the Crescent to Oldfield Road ; along Oldfield Road to Regent Road ; along Regent Road to Regent Bridge ; thence in a northerly and westerly direction along the River Irwell to the boundary between the former Townships of Salford and Pendleton near Peel Park ; thence along the boundary between such former Townships to the point first named.	Dr. V. Newton, 227, Oldfield Road, Salford, 5.
Salford (No. 2).	Such part of the Township of Salford as is comprised within the following boundary, namely : Commencing at the boundary of the former Townships of Salford and Pendleton at New Windsor, Salford ; along New Windsor and the Crescent to Oldfield Road ; along Oldfield Road to Regent Road ; along Regent Road to the River Irwell at Regent Bridge ; thence in a southerly and westerly direction along the River Irwell and the Manchester Ship Canal to the boundary between the former Townships of Pendleton and Salford ; thence along the boundary between such former Townships to the point first named.	Dr. W. Sanderson, 1, Haworth Street, Cross Lane, Salford, 5.



Description.	District.	Public Vaccinator.
Pendleton District (Salford Township).	The whole of the former Township of Pendleton.	Dr. E. A. Ferguson, 90, Fitzwarren St., Pendleton.
Broughton District (Salford Township).	The whole of the former Township of Broughton.	Dr. Thomas Waycott Chaff, "Limefield," 194 Broughton Lane, Broughton, Salford, 7.

The Vaccination Officers and their Districts were as follows:—

District.	Vaccination Officer.
North and South Salford Registration Sub-Districts.	Mr. A. Sharrocks, 143, Regent Road, Salford, 5.
West Salford Registration Sub-District	Mr. C. F. Settle, 14, Broom Crescent, Pendleton, Salford, 6, until September, 1935, when, on the death of Mr. Settle, Mr. Sharrocks was appointed Vaccination Officer for the whole of Salford.

Particulars as to vaccination carried out in Salford during the year 1935 are as follows:—



## SECTION IIA.

# Atmospheric Pollution.

## Atmospheric Deposit.

Laboratory investigations concerning the nature and amount of pollution in Salford's atmosphere have been continued throughout the year at the Health Department's Laboratories.

The four deposit gauges which collect the material for analysis are located as follows :—

- (1) Peel Park, which is fairly centrally situated within the City.
- (2) Ladywell Sanatorium and Isolation Hospital, which is just within the City boundary to the west.
- (3) Drinkwater Park Hospital, which is a short distance beyond the City boundary to the north-west.
- (4) Nab Top Tuberculosis Sanatorium, Marple, Cheshire, which is some ten miles distant from Manchester Town Hall in a south-easterly direction.

The accompanying tables show the nature and amount of atmospheric deposit at three observation stations, namely, Peel Park, Ladywell Sanatorium, and Nab Top Sanatorium, Marple, for the ten years 1926 to 1935 inclusive. As the fourth deposit gauge was only transferred from Regent Road to Drinkwater Park in 1931, these figures are not included.

In all cases the figures for the later five years, 1931 to 1935, show a very definite improvement as compared with those for the previous five years, 1926 to 1930. This improvement is noticeable first of all in respect of the amount of total solids deposited, the average yearly amount at Peel Park for the period 1926 to 1930 being 13.48 metric tons per square kilometre, against an average of 8.87 metric tons per square kilometre for the period 1931 to 1935. Translated into English measure, the above comparison works out approximately as follows :—

For 1926 to 1930 the average yearly deposit was 34 tons per square mile.

For 1931 to 1935 the average yearly deposit was 22 tons per square mile.

## PEEL PARK SOOT GAUGE OBSERVATIONS, 1926-1935

METRIC TONS PER SQUARE KILOMETRE.

Year.	Rain-fall in m.ms.	Insoluble matter.		Soluble matter.		Total Solids.	Included in soluble matter.			p.H.	Acidity
		Tar.	Carbona- ceous other than tar.	Ash.	Loss on Ignition.		Sul- phates.	Chlor- ine.	Am- monia.		
1926 .....	73.5	0.80	2.91	4.86	2.69	12.71	2.12	1.16	0.03	—	—
1927 .....	76.2	0.64	4.73	5.63	2.49	17.12	2.52	1.74	0.11	—	—
1928 .....	78.7	0.60	3.76	4.87	2.55	15.26	3.07	1.78	0.06	—	—
1929 .....	75.7	0.49	1.96	4.89	1.04	10.84	1.25	0.97	0.03	—	—
1930 .....	75.3	0.50	2.10	5.11	1.21	11.47	1.06	0.85	0.03	—	—
Total 1926-1930 .....	379.4	3.03	15.46	25.36	9.98	67.40	10.02	6.50	0.26	—	—
Average Annual deposit 1926-1930 .....	75.9	0.61	3.09	5.07	1.99	13.48	2.00	1.30	0.05	—	—
1931 .....	84.3	0.15	1.41	2.98	1.19	8.67	1.42	1.33	0.02	4.1	0.51
1932 .....	62.3	0.15	1.84	3.59	0.86	8.46	1.12	0.95	0.03	4.0	0.72
1933 .....	33.0	0.16	2.06	2.76	0.74	7.24	0.65	0.56	0.02	3.6	0.18
1934 .....	63.4	0.19	1.91	4.53	1.50	10.35	1.16	0.94	0.02	4.3	0.23
1935 .....	72.6	0.22	2.03	3.91	1.11	9.67	0.88	0.74	0.01	4.4	0.28
Total 1931-1935 .....	315.6	0.87	9.25	17.77	5.40	44.39	5.23	4.52	0.10	20.4	1.92
Average Annual deposit 1931-1935 .....	63.12	0.174	1.85	3.55	1.08	8.87	1.04	1.04	0.02	4.08	0.38

## MARPLE, NAB TOP SANATORIUM, SOOT GAUGE OBSERVATIONS, 1926-1935.

METRIC TONS PER SQUARE KILOMETRE.

Year.	Rain-fall in m.ms.	Insoluble matter.			Soluble matter.		Total Solids.	Included in soluble matter.			p.H.	Acidity
		Tar.	Carbona- ceous other than tar.	Ash.	Loss on Ignition.	Ash.		Sul- phates.	Chlor- ine.	Am- monia.		
1926 .....	78.6	0.27	1.20	0.84	1.03	0.94	4.28	0.88	0.80	0.05	—	—
1927 .....	82.8	0.38	3.60	1.71	2.02	1.27	8.98	1.41	0.88	0.08	—	—
1928 .....	67.8	0.28	2.82	1.96	1.42	1.27	7.75	1.28	0.71	0.05	—	—
1929 .....	77.5	0.10	1.19	0.90	0.85	1.30	4.34	0.77	0.66	0.03	—	—
1930 .....	90.0	0.14	0.79	0.58	0.85	0.97	3.33	0.60	0.63	0.04	—	—
Total 1926-1930 .....	396.7	1.17	9.60	5.99	6.17	5.75	28.68	4.94	3.68	0.25	—	—
Average Annual deposit 1926-1930..	79.3	0.23	1.92	1.19	1.23	1.15	5.73	0.99	0.73	0.05	—	—
1931 .....	100.0	0.17	0.87	0.98	0.78	1.40	4.20	0.76	0.82	0.03	4.30	0.41
1932 .....	74.6	0.10	0.65	0.83	0.72	1.28	3.58	1.08	0.81	0.02	4.4	0.31
1933 .....	51.9	0.05	0.65	0.76	0.57	1.11	3.14	0.65	0.50	0.01	4.2	0.15
1934 .....	63.3	0.02	0.60	0.73	0.75	1.06	3.16	0.57	0.60	0.02	5.0	0.18
1935 .....	69.9	0.06	0.67	0.80	0.89	1.25	3.68	0.58	0.59	0.02	4.7	0.21
Total 1931-1935 ...	359.7	0.40	3.44	4.10	3.71	6.10	17.76	3.64	3.32	0.10	22.6	1.26
Average Annual deposit 1931-1935..	71.9	0.08	6.69	0.82	0.74	1.22	3.55	0.73	0.66	0.02	4.5	0.25

LADYWELL SANATORIUM SOOT GAUGE OBSERVATIONS, 1926-1935.

METRIC TONS PER SQUARE KILOMETRE.

Year.	Rain-fall in m.m.	Insoluble matter.		Soluble matter.		Total Solids.	Included in soluble matter.			p.H.	Acidity
		Tar.	Carbona- ceous other than tar.	Ash.	Loss on ignition.		Sul- phates.	Chlor- ine.	Am- monia.		
1926 ....	76.6	0.81	2.90	3.69	1.18	10.30	1.52	1.09	0.07	—	—
1927 ....	74.5	0.12	2.70	4.03	1.95	10.84	1.60	1.07	0.08	—	—
1928 ....	78.4	0.63	1.07	3.77	1.39	11.58	1.55	1.40	0.09	—	—
1929 ....	78.0	0.43	1.81	3.35	0.89	8.41	1.05	0.89	0.03	—	—
1930 ....	71.2	0.28	1.26	2.01	0.89	6.04	0.81	0.88	0.03	—	—
Total 1926-1930	378.7	2.27	9.74	16.85	6.30	47.17	6.53	5.33	0.30	—	—
Average Annual deposit 1926-1930	75.7	0.45	1.95	3.37	1.26	9.43	1.31	1.06	0.06	—	—
1931 ....	90.2	0.11	1.52	2.31	1.16	6.69	0.96	0.94	0.07	3.8	0.72
1932 ....	76.4	0.07	1.74	2.20	0.95	6.96	1.06	1.31	0.03	4.2	0.67
1933 ....	50.9	0.09	1.73	1.94	0.72	6.01	0.77	0.75	0.01	3.8	0.30
1934 ....	64.9	0.07	1.56	2.43	1.71	7.73	1.09	0.92	0.02	4.3	0.31
1935 ....	81.8	0.12	2.03	2.85	1.73	9.13	1.17	0.82	0.03	4.3	0.34
Total 1931-1935	364.2	0.46	8.58	11.73	6.27	36.52	5.05	4.74	0.16	20.4	2.34
Average Annual deposit 1931-1935	72.8	0.09	1.71	2.35	1.25	7.30	1.01	0.95	0.03	4.1	0.47



Not only is the improvement noticeable in respect of total solids deposited, but also in such deleterious constituents as tar and other carbonaceous matter; furthermore, this improvement applies to all three observation stations.

The explanation of the improvement during the last quinquennium is not altogether simple. It is certain that the proportion of solid carbonised fuel consumed is still small, raw coal being largely used for the home fires.

In the first place, it is likely that the more genial weather of recent years has enabled householders to manage without fires for longer periods. Again, there is undoubtedly a falling off in domestic cooking, owing to the increasing availability of ready cooked meals. Other factors which must have had some influence in the reduction of atmospheric deposit are the increasing use of electricity and gas for domestic cooking and heating, and also for industrial purposes. That these factors still continue to operate beneficially is shown by the following information, for which I am indebted to the heads of the respective departments.

#### **Electricity.**

There are now well over 7,000 domestic electric cookers in use in Salford and Prestwich, most of which have been connected during the past seven years. There is no doubt that the use of these cookers tends to lessen atmospheric pollution, but, at the same time, rapid development has been going on in the domestic use of electric fires and electric water heaters, both of which have beneficial effects on atmospheric conditions, the former chiefly in winter, and the latter particularly in the summer.

As an indication of the general rapid increase in the domestic use of electricity, the quantity of electricity sold to domestic consumers has increased more than twelve-fold in the last ten years.

As far as the industrial use of electricity is concerned, there has been a steady increase during the past ten years.

#### **Gas.**

The Gas Engineer has supplied the following list, giving to the best of his knowledge the total number of cookers (exclusive of grillers and similar small appliances) on the district, year by year, for the past eleven years.

“ All cookers are included, whether on hire, in course of hire purchase, or  
“ sold outright to consumers; we do not know how many of the last have been  
“ scrapped or removed from the district by their owners, nor do we know how  
“ many cookers have been ‘imported’ into the district by their owners, or pur-  
“ chased from other sources than ourselves, so that the figures are subject to  
“ adjustment on these accounts to an extent unknown to us. However, these  
“ adjustments are probably unimportant, and the figures illustrate the general  
“ tendency with sufficient accuracy.

At 31st March.	Cookers on district.	Years' Increase.	5 Year's Increase.
1926. ....	29,331	—	—
1927.....	32,171	2,840	—
1928.....	33,225	1,054	—
1929 ..	34,993	1,768	—
1930 ..	37,287	2,294	—
1931 ..	38,481	1,194	9,150
1932 ..	39,332	851	—
1933 ..	39,241	91	—
1934 ..	39,502	261	—
1935 ..	40,327	825	—
1936 ..	43,532	3,205	5,051

" I think we may safely say that of the total number of cookers on the district, the proportion in active use is higher to-day than it has been for some years, as so many of them are of the latest design, and have been recently ordered in replacement of older types.

" To what extent we have contributed to the observed diminution in smoke during the last quinquennial period it is difficult to say, but there can be no doubt that the increase in the number of cookers in use has been of material help."

Furthermore, gas is being increasingly used in industry. For example, the new business booked during the past year represents the additional substitution of gas in industry for approximately 1,000 tons of coal per annum.

With regard to vertical retort coke, it is interesting to learn that when production of this desirable fuel is resumed in the near future, there will be some 80 tons per day for sale, equal to twice the former quantity available. Furthermore, this dry coke will in future be mechanically screened to uniform sizes, and completely de-breezed, which will undoubtedly make it more serviceable and acceptable to consumers.

#### Daylight Measurement.

Measurement of daylight by the potassium iodide method has been continued at four stations, namely :—

- (1) Regent Road, Salford (Health Offices).
- (2) Nab Top Tuberculosis Sanatorium, Marple.
- (3) Ladywell Sanatorium and Isolation Hospital (Salford and Eccles boundary).
- (4) Drinkwater Park Hospital, Prestwich.

The following table sets forth the measurement of daylight received per year during the past ten years at these four stations :—

## MEASUREMENT OF DAYLIGHT.

## POTASSIUM IODIDE METHOD.

## YEARLY TOTALS IN MILLIGRAMMES OF IODINE.

Year.	Regent Road.	Nab Top Sanatorium, Marple.	Ladywell Sanatorium.	Drinkwater Park, Prestwich.
1926.....	1613.7	1746.6	1654.9	1747.2
1927.....	1467.2	1688.5	1745.1	1846.1
1928.....	1204.8	1507.2	1573.5	1527.2
1929.....	1559.0	1932.9	1772.2	1781.5
1930.....	1589.7	1895.0	1731.2	1642.2
<b>Yearly average for five years 1926-1930 ..</b>	<b>1486.9</b>	<b>1754.0</b>	<b>1695.4</b>	<b>1708.8</b>
1931.....	1450.6	2084.5	1714.5	1751.5
1932.....	1796.7	2123.6	1958.6	1819.1
1933.....	1627.6	2311.7	2073.8	1953.1
1934.....	1743.2	2323.4	2162.2	2070.6
1935.....	1650.2	2493.6	2051.1	1965.6
<b>Yearly average for five years 1931-1935</b>	<b>1653.7</b>	<b>2267.4</b>	<b>1992.0</b>	<b>1912.0</b>
Percentage increase during the last five years over previous five years 1926-1930...	11	29	17	11

The above table is interesting in-as-much as it shows a marked all round increase in daylight reception during the last five years as compared with the previous five years.

To some extent, this increase in daylight reception is due to inclusion of exceptionally sunny years, and it is a matter of interest that by far the greatest increase occurred at Nab Top Sanatorium, Marple, where atmospheric pollution is always considerably less than at the other three stations. This suggests that much of the additional sunshine of the sunny years is filtered out by the smoke canopy which perpetually hovers over the more industrial areas.

The all important question that arises is, to what extent does our "smoke filter" take out those particular rays of the sun which have such a vital bearing upon the health of the people, namely the ultra violet rays, as opposed to the ordinary visible rays. This question is not easy to answer, for the sufficient reason that none of the methods at present used for such measurement is entirely free from objection. A considerable amount of work has been carried out by this department with the object of finding out how we really stand in Salford in respect of reception of health giving rays, and the whole subject is discussed in some detail on pages 213 to 222 of this report. In the near future it is hoped that we shall be able to measure by electrically recording methods the actual amount of "ultra violet light" received locally throughout the year.

## SECTION III.

## Infectious Diseases.

The number of notifications of cases of infectious disease received during 1935 was 2,430 as compared with 2,715, received during 1934, a decrease of 285 cases.

The principal cause of this decline in the total number of cases notified was a fall of 198 in the notifications of diphtheria as compared with the previous year. It should be remembered that this disease was prevalent in Salford and in many other parts of the country to an abnormal extent during 1934, and the falling off in its incidence during 1935 represents a return to more normal conditions. Perhaps the most important point which emerges from a review of these statistics is the reduction in the cases of pulmonary and non-pulmonary tuberculosis notified during 1935, as compared with any previous year— the figures for 1935 and former years are set out in detail in the Table appearing on pages 67 and 68 of this Report. These figures are symptomatic of the steady progress which is being made throughout the country in bringing this disease under control.

The other principal variations, from the point of view of numbers only, between the two years relate to Scarlet Fever and Acute Primary Pneumonia. The increase of 40 cases notified in the case of the former and the decrease of 64 in the latter do not, however, call for special comment.

Reference should be made to the increase of 14 in the number of cases of Ophthalmia Neonatorum. This was accounted for by a series of cases occurring in Hope Hospital during the year.

Details of the number of cases of infectious disease notified are given in Tables 1 and 2 (pages 66 to 67).

The usual methods, described in previous Reports, for the prevention of the spread of infectious diseases were continued. School teachers, in addition, are encouraged to report cases of non-notifiable disease, which are at once investigated by the School Medical Officers. Diphtheria Antitoxin is supplied immediately, free of charge, to any Medical Practitioner who asks for it. A similar arrangement in respect of Scarlet Fever Antitoxin was instituted in May, 1932. These arrangements are used freely by Salford Medical Practitioners.

Cases of infectious disease which cannot be isolated at home are removed to the Corporation's Infectious Diseases Hospital, the Ladywell Sanatorium (for detailed report upon this Institution see pages 89 to 110). The disinfection of premises in which cases of infectious disease have occurred is carried out by a special staff of disinfectors. Bedding and clothing which have been exposed to infection are disinfected at the Corporation's Disinfecting Station at Mode Wheel; details of the work carried out at this Station appear on pages 37 to 39.



TABLE I. 1.

# CASES OF INFECTIOUS DISEASES NOTIFIED DURING THE YEAR 1935.

NOTIFIABLE DISEASES.	Cases notified in Whole District.										Total Cases notified in each Ward.												Cases removed to Hospital.		
	At Ages—Years.										At All Ages.														
	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and upwards.	Albert Park.	Charlestown.	Claremont.	Crescent.	Docks.	Kersal.	Langworthy.	Mandley Park.	Ordsall Park.	Regent.	St. Matthias.	St. Paul's.	St. Thomas.	Seedley.	Trinity.		Waste.	
Smallpox.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Diphtheria (including Membranous croup).....	690	8	171	385	82	36	6	2	38	70	18	74	29	30	44	58	36	48	30	55	76	18	40	26	680
Erysipelas.....	114	3	5	4	14	25	49	14	8	7	6	10	9	8	6	7	3	11	6	6	8	6	7	6	72
Scarlet Fever.....	587	5	172	346	51	11	2	...	29	52	25	35	31	42	31	48	36	57	36	53	27	28	29	28	526
Typhus Fever.....	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	1	1	2	1	6
Enteric Fever.....	8	...	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued fever.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Relapsing fever.....	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	5	1	2	4	...	...	1	...	...	10
Puerperal fever.....	19	...	...	...	4	15	...	...	...	1	1	1	2	...	2	1	3	3	1	...	4	1	...	1	6
Puerperal Pyrexia.....	27	...	...	...	8	19	...	3	2	2	1	2	2	1	2	1	3	...	...	...	...	...	...	...	...
Cholera.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-Spinal Meningitis.....	11	1	6	2	1	1	...	3	...	...	...	3	...	...	...	...	...	2	1	...	2	...	...	...	...
Acute-Poliomyelitis.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Glanders.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ophthalmia Neonatorum.....	28	28	...	...	...	...	94	15	27	5	...	1	...	1	4	4	3	1	...	2	2	1	...	...	496
Pulmonary tuberculosis.....	366	1	20	95	141	...	...	...	...	24	20	30	12	17	23	21	21	32	16	23	24	12	37	27	...
Other forms of tuberculosis.....	93	1	6	35	23	20	7	1	8	8	6	5	1	5	1	8	6	7	7	10	10	3	5	3	32
Malaria.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...
Dysentery.....	2	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Primary Pneumonia.....	430	28	72	74	83	...	79	22	22	46	14	39	16	14	34	12	24	30	31	38	41	11	33	25	21
Influenza.....	45	...	3	4	8	10	17	3	2	7	...	3	1	3	7	...	2	1	2	9	3	1	1	3	...
Encephalitis Lethargica.....	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Polio Encephalitis.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pemphigus Neonatorum.....	9	9	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	1	...	1	4	...	9
Neonatorum.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1858

[illegible]





**TUBERCULOSIS DEPARTMENT.****Annual Report for 1935.**

The Tuberculosis Dispensary is situated at Nos. 145 and 147, Regent Road, Salford, and consists of two consulting rooms with waiting and dressing rooms attached, X-Ray and dark rooms and a room set apart and specially fitted up for the performance of Artificial Pneumothorax Refills, Gas Replacements, etc., which is necessary owing to the increasing number of patients undergoing collapse therapy. There are no branch dispensaries or visiting stations. The Staff consists of two Medical Officers, five Health Visitors and three Clerks.

In addition to the Dispensary work the Tuberculosis Officers are responsible for the treatment of Tuberculous patients at Ladywell Sanatorium (72 beds) and the Senior Tuberculosis Officer visits the Municipal (Hope) Hospital every week for the purpose of consulting with the Medical Staff as to the diagnosis of suspected cases of Tuberculosis and to recommend the most suitable treatment.

Since the advent of Hope Hospital to the control of the Health Committee of the City Council in April, 1935, it has at last become possible to bring about the centralised control of all cases of Tuberculosis.

**(a) Patients Referred for Examination.**

Eight hundred and thirty (830) patients (including non-pulmonary cases) were referred to the Tuberculosis Officers for examination by General Practitioners, School Medical Officers, and local Hospitals during 1935. It is to be regretted that, in many cases, primary notification of tuberculosis are received when the disease is in such an advanced state that no treatment can be of lasting value, but, during the year, the improvement which had taken place during the last few years has continued, and more early and suspected cases have been sent in by the General Practitioners. It is only by the co-operation of the General Practitioners that the Tuberculosis Officers can deal with cases in their earliest and, therefore, most curable stage.

The relations between the General Practitioners of the City and the Dispensary Medical Staff are most cordial and every encouragement is given to send all suspected cases to the Dispensary for examination. A full report of the condition found after physical and X-Ray examination is sent to the Doctor concerned, and it has been possible to give invaluable assistance in diagnosing not only lesions of the chest and other organs caused by tuberculosis, but many other non tuberculous lesions of the chest. This is of great value to Practitioners in the treatment of such cases.

A large majority of the patients referred for examination are seen before notification.

The fact that many cases of pulmonary tuberculosis reach a comparatively advanced stage before notification is very often due to the late period at which the patient seeks the advice of the General Practitioner. It is worthy of note that in a number of Doctor's reports accompanying such advanced cases to the Dispensary occur the words "I have only seen this patient for the first time a few days ago."

It is a remarkable fact that pulmonary tuberculosis can reach widespread distribution in the lungs without producing symptoms sufficiently striking to cause the person affected to seek advice and it is often difficult to make patients and their friends believe that serious disease is present in the chest.

Improvement in this respect can only be brought about by propaganda work and all opportunities are taken by Tuberculosis Officers to give lectures and talks to various local associations and by window displays at the Health Office to bring before the Public a knowledge of the early signs of tuberculosis.

At the same time it cannot be too strongly emphasised that inadequate medical examination when the patient consults his Doctor is bound to result in failure to recognise tuberculosis at an early or curable stage. It is pleasing to know that the percentage of cases of pulmonary tuberculosis not notified before death is gradually decreasing from year to year (from 16.73 in 1930, to 6.81 in 1935), but it is regretted that the percentage of fatal cases notified within three months of death during the past year shows an increase on the previous year's figures.

There is reason to believe that some patients in a superior social position do not wish the fact that they are suffering from tuberculosis to be known to the public authorities. From time to time efforts are made to bring to the notice of the Medical Practitioners of the City that it is their statutory duty under the Public Health Regulations to notify all cases of tuberculosis as soon as they come to their notice.

A point of first importance, and one that is frequently neglected, is the sending of samples of patient's sputum for examination for the presence of tubercle bacilli in all cases of persistent cough which do not yield early to ordinary treatment.

It is satisfactory to note that definite improvement in the sending of sputa is taking place. One thousand three hundred and eleven (1311) samples of sputum were examined for General Practitioners in 1935, as against one thousand and four (1004) in 1934.

All sputum examinations desired by Medical Practitioners are made free of charge at the Municipal Pathological Laboratory and special sterile metal containers are provided for the collection of specimens.

**(b) Routine Procedure.**

When a patient is notified to this Department by a Medical Practitioner as suffering from tuberculosis in any form whatever, the home of such patient is immediately visited by one of the Health Visitors. Precautions as to the likelihood of the spread of infection, the desirability of separate sleeping accommodation, etc., are advised, and instructions given regarding periodical disinfection of walls, bedding and utensils.

The examination of contacts, especially in the case of adolescents, is of the first importance and every endeavour is made by the Health Visitors to induce all contacts to attend at the Dispensary for examination. Unfortunately most of these above school age are working and can only be examined at an evening clinic as they refuse to take time off work and so lose money for an examination which they consider to be of little importance. We consider that X-Ray examination of contacts should also be carried out and this is done at the Dispensary in the great majority of cases.

The routine examination of all child contacts is of much less importance than in the case of adolescents but this is carried out as far as possible. Four hundred and seventy seven (477) such contacts were examined last year. Three of these were found to be suffering from pulmonary tuberculosis.

It happens not infrequently that a diagnosis cannot be made on first examination of a patient at the Dispensary, and in all such cases the patients are re-invited to attend the Dispensary periodically until a definite diagnosis is made.

In some cases of advanced disease where removal to an Institution for treatment is impracticable, and adequate nursing is impossible under the patient's home conditions, arrangements are made with the District Nursing Association, and the patients are visited daily (in some cases twice daily) in their homes by a trained nurse. In the case of patients in poor circumstances and recommended by the Tuberculosis Officers as being suitable for the granting of extra nourishment, arrangements are made with milk dealers in the City for milk and eggs to be supplied each day.

The usual types of cases receiving extra nourishment are : (a) patients who have received an adequate course of sanatorium treatment and whose medical condition is such that, with the grant of extra nourishment, they may be expected to maintain or recover full working capacity ; and (b) patients in whose cases ultimate arrest of the disease may reasonably be anticipated, and who are waiting for admission to a sanatorium.

Owing to the continued economic depression during the past year, more cases have had to be assisted with extra nourishment than usual. It is found that when patients are discharged from the Sanatorium where they have been



receiving adequate nourishment to homes where the food supply is below normal, they soon begin to lose weight, their resistance is lowered, and the disease is very liable to become active again.

### (c) X-Ray Examination.

The efficiency of a Tuberculosis Dispensary is greatly enhanced by its equipment with a modern X-Ray installation. A powerful set (100 M.A. single valve unit) is installed at the Dispensary, with all necessary accessories, and X-Ray examinations are made in large numbers.

Every new case sent for investigation is carefully screened after physical examination, and in all cases a skiagram of the chest or other part is taken.

This method of examination is an invaluable aid, not only for purposes of diagnosis, but in obtaining information as to the real extent of the disease in the lungs, bones or joints of the patient. It is also of great value in determining the results of treatment. Two thousand and thirty five X-Ray examinations were made last year. The introduction of paper films which cost only 50 per cent. of the ordinary films is reducing the expense of X-Ray work and for certain purposes they give admirable results. X-Ray examinations have been found of great value to General Practitioners in the differentiation of other chronic diseases of the lung simulating tuberculosis, many of which in the past have been diagnosed as cases of pulmonary tuberculosis. It should also be noted that considerable time is now saved in making a definite diagnosis of chest diseases, and doubtful cases are not required to be kept under observation for periods of longer than one or two months before a final decision can be made.

Much public money and loss of the patients' time is saved also by obviating the sending of suspected cases to the Sanatorium for periods of observation where the physical signs in the lungs simulate those of pulmonary tuberculosis. By means of the X-Rays the differential diagnosis of such cases is made enormously easier.

The great value to the Medical Officers of X-Ray examination of the chest has been markedly shown by the large number of cases gradually removed from the Dispensary Register which had many years ago been diagnosed as cases of pulmonary tuberculosis on physical signs only. This has been possible owing to a more accurate diagnosis by X-Ray examination.

In the X-Ray Department a reducing camera was installed in 1930, and when a radiogram showing tuberculous disease is taken, a reduced sized photographic copy is sent to the General Practitioner. In order that he may have an accurate knowledge of the condition and extent of the disease, careful notes describing the lesions are filled in on the back of the photograph.

Letters of appreciation have been received from Medical Practitioners regarding this new development, which is undoubtedly of great assistance to the doctor attending the patient.

It is hoped, during the ensuing year, to instal at the Dispensary a larger X-Ray plant in order to utilise the latest form of X-Ray tube which will still further improve the quality of the films obtained, although those produced by the present installation are of high quality.

**(d) Treatment by Artificial Pneumothorax.**

The greatest advance of recent years in the treatment of pulmonary tuberculosis is the more universal use of Artificial Pneumothorax or collapse of the lung.

This method of treatment is now well established and is in regular use.

Primary inductions are carried out both at Ladywell and Nab Top Sanatoria. Refills are continued there for six months or longer according to the time the patient is able to remain in the Sanatorium.

Usually after six months, in straightforward cases, the patient can return home, and the refills are continued at the Dispensary. At the end of 9-12 months patients return to work and have refills at intervals of two to four weeks, according to absorption of air.

No trouble has been experienced during the past year in obtaining the attendance of patients who are working and the opportunity is taken here to express appreciation of the action of employers in allowing their employees to attend for refills when required. As the collapse of the lung must be kept up for a period of from two to four years the number of patients requiring refills is constantly growing, and a special room is set apart for the Dispensary treatment of those patients undergoing collapse therapy. The room is fitted with all necessary apparatus for refills, gas replacements, etc.

The ideal case for treatment by collapse therapy is one in which the disease is confined entirely to one lung so far as can be ascertained from an X-Ray film of the chest.

Provided that the whole lung collapses completely without adhesions a cure after three to four years' treatment is obtained in the great majority of cases.

But in those cases in which collapse is imperfect and adhesions are present, pleural effusions are almost certain to form and the prognosis of the case is completely altered and a cure is much less likely to be obtained.

Our experience has also taught us that in those patients who have some disease in the contra-lateral lung there is a considerable likelihood of this disease extending and becoming active at a later date. This is especially so in patients who for economic reasons are obliged to return to work too soon and as a consequence too much work is thrown on the non-collapsed lung.

So many of these patients have died through active spread in the contra-lateral lung that we now choose our cases for collapse treatment more conservatively than at first.



At the present time we do not recommend collapse therapy unless the lesion on the less diseased side is quite small and confined to one zone of the lung.

In a few patients, arrest of the lesion on one side has had to be followed by collapse of the other lung owing to extension of the disease and this has been accomplished successfully.

There is no doubt that collapse therapy has completely altered the prognosis of Pulmonary Tuberculosis in suitable cases.

#### **Analysis of Cases Given Artificial Pneumothorax Treatment.**

During the past year forty-two (42) new cases commenced treatment by Artificial Pneumothorax (nineteen (19) at Ladywell Sanatorium), (twenty-three (23) at Nab Top Sanatorium). Sixty-one (61) patients continued their refills at the Dispensary, thirty-three (33) of whom are working with completely quiescent disease. The number of Artificial Pneumothorax refills carried out at the Dispensary, Ladywell, and Nab Top Sanatoria during the past year was as follows :—

Tuberculosis Dispensary.....	576
Ladywell Sanatorium.....	311
Nab Top Sanatorium.....	313
Total Number of Refills.....	<u>1,200</u>

#### **Other Forms of Treatment for Pulmonary Tuberculosis.**

##### **1. TREATMENT BY GOLD SALTS. (GOLD THIOSULPHATE).**

Two preparations have been used viz :—Sanocrysin and Crisalbine.

These preparations are employed dissolved in distilled water for the small doses and Gluconyl (Calcium Gluconate) for the larger doses.

The treatment is commenced with .05 gram, and gradually increased to .5 gram, until 4.5 grams, have been given. This constitutes one course and is repeated if necessary. The use of Gluconyl as a vehicle for gold salts has been found to greatly reduce the risk of certain complications arising such as skin rashes, diarrhoea and albuminuria.

#### **TYPE OF CASE SUITABLE FOR TREATMENT BY GOLD SALTS.**

- (a) Patients undergoing collapse treatment of one lung in whom exacerbation of an early lesion in the other lung takes place. Good results have been obtained in some cases and X-Ray examination has shown that the spread of disease has been checked with subsequent fibrosis. In some cases considerable resolution of the disease has taken place; the X-Rays showing marked clearing of the lung.

In a few patients little benefit has been obtained owing to complications arising. Thirteen patients in this category have received gold injections.

- (b) Patients with the upper portions of both lungs about equally affected are not suitable for collapse therapy and when ordinary sanatorium treatment has little effect the injection of Gold Salts does in some cases afford considerable benefit. The sputum becomes negative and fibrosis of the lesion commences. In fifty per cent. of our cases little or no benefit was obtained.

Fourteen patients of this type have received gold injections.

## 2. NORDALIN TREATMENT.

This treatment has recently been introduced into this country from Switzerland. Its object is to increase the resistance of the body to the tubercle bacillus and so prevent their growth in the human organism.

The preparation consists of three tablets named :-

1. Recytel.
2. Nordalin A. (Containing a small amount of Tuberculin).
3. Nordalin B.

The treatment is commenced with tablets of Recytel and Nordalin B given on alternate days and is continued for two weeks after which every third day a tablet of Nordalin A is given instead of the previous two preparations. If after two months, satisfactory progress is being made the doses are increased. Should the Nordalin A produce a re-action the dose is of course reduced.

Nine cases with bilateral disease (unsuitable for artificial pneumothorax and in whom Gold Salts produced some complication necessitating stopping the injections), and two cases of unilateral disease in whom it was impossible to collapse the lung, have received this treatment.

Of these patients, three have died, one showed no improvement, five were much improved and two showed remarkable clearing of the lesions as shown by skiagram.

It is too early to make any statement as to the value of the treatment but we are continuing its use.

Certain types of cases are unsuitable for this form of treatment.

- (a) Cases of extensive disease are made worse.
- (b) Cases with any softening and cavitation. The liability to haemoptysis appears to be increased.

## (c) Insured Persons.

Insured patients not in need of Institutional treatment are usually placed on domiciliary treatment, that is to say, they are treated by their own doctors whilst residing at home, and records of progress should be furnished every three months by the attending Medical Practitioners on Form G.P. 36. These patients are examined from time to time by one of the Tuberculosis Officers, and a report furnished to the Practitioner concerned.

**(f) Dispensary Treatment.**

Non-insured patients suffering from chronic disease who are unsuitable for Sanatorium treatment or who have received Institutional treatment and are now ambulant, and who are too poor to pay a General Practitioner, are treated at the Dispensary by Cod Liver Oil Emulsions or suitable drugs.

The condition of these persons depends to a large extent on the home conditions, the facilities for obtaining suitable food and the general habits of the patient. Their disease appears to remain stationary for long periods, especially when they are of middle age or over and when the acute stage of the disease is past.

**(g) Primary Tuberculous Pleurisy.**

It is again opportune in this report to comment on the above condition.

Many more cases of primary tuberculous pleurisy have been referred by General Practitioners during the past year to the Tuberculosis Officer, who has also been asked to see a considerable number at the Hope Hospital. It may be said that all these patients have received Sanatorium treatment until the disease has become apparently arrested.

It is now recognised by experienced Tuberculosis workers that the majority of primary pleurises and certainly those with effusion (except a few which may be due to Syphilis or New Growth) should be regarded as due to the Tubercle Bacillus and the patient given adequate treatment before returning to work.

Samples of the effusion from the cases of primary pleurisy passing through our hands have been submitted to the laboratory for guinea pig inoculation and the great majority have been returned positive.

In former years many patients who had suffered from primary pleurisy at some previous date returned to work after a few weeks' treatment at home, and all of them developed active disease in one or both lungs after a varying interval of time. It is evident that the disease had been latent over this period, and owing to the patients' resistance becoming lowered in some way the Tubercle Bacillus had again become active.

We are of opinion that all patients with primary tuberculous pleurisy should undergo Sanatorium treatment until all X-Ray evidence of the disease has disappeared. This will, as far as is possible, prevent the development of active pulmonary tuberculosis at a later date.

**(h) Non-pulmonary Tuberculosis.**

This form of tuberculosis continues to show a marked decline in incidence. The total number of primary and informal notifications of non-pulmonary or surgical tuberculosis received during 1935 was ninety three (93), fifty one (51) adults and forty two (42) children of school age). These are made up of cases

suffering from disease of glands, bones, joints, abdomen, meninges and other forms. The majority of these patients are not seen at the Dispensary as they are usually sent direct by the General Medical Practitioners to the local Hospitals for diagnosis and treatment. A certain number are sent in the first instance to the Dispensary by General Practitioners when the diagnosis is doubtful and in the case of children many are referred by the School Medical Officers.

Cases requiring surgical treatment are sent by the Dispensary Medical Officers to the Municipal Hospital in most cases, but some are first seen at Salford Royal Hospital. Where Sanatorium treatment is likely to be of benefit the patients are sent by the Tuberculosis Officers and at the request of Hospital Medical Officers to Nab Top Sanatorium. When considered suitable, patients are referred for treatment at the Artificial Sunlight Clinic.

### ARTIFICIAL SUNLIGHT.

Five sessions per week increased from three sessions since April, 1934, have been allotted to the Tuberculosis Department for the treatment of non-pulmonary tuberculosis in the Artificial Sunlight Clinic. The equipment consists of :—

2. Carbon Arc Lamps of the Westminster type.
1. Jesionek Mercury Vapour Lamp.

Cases suitable for this form of treatment are :—

- (a) Tuberculosis of the skin.
- (b) Tuberculous glands, especially those with discharging sinuses.
- (c) Abdominal Tuberculosis.
- (d) Tuberculosis of bones and joints.

All these forms of non-tuberculous disease derive great benefit.

### EXAMINATION AND TREATMENT OF CHILDREN DURING 1935.

#### (a) Contacts.

During the year 1935, two hundred and sixty-three (263) children were examined as contacts at the Tuberculosis Dispensary.

None was found to have tuberculosis disease in any form.

#### (b) Pulmonary Disease in Children.

##### 1. TUBERCULOUS.

One hundred and fifty (150) children of school age were referred to the Dispensary in 1935 for examination of the chest by the School Medical Officers, General Practitioners and Medical Officers of local Hospitals and Dispensaries.

Thirteen (13) children were diagnosed as suffering from tuberculous disease of the chest. Of the above thirteen cases, one (1) came from a home in which a positive adult case of pulmonary tuberculosis had occurred during the past two or three years.



The adult type of pulmonary tuberculosis is rare in children of school age and only two patients were found to be suffering from this type. Each had definite physical and X-Ray evidence of the disease with a positive sputum. One other patient was a case of tuberculous plenrisy with effusion and was positive on guinea pig inoculation. Seven patients showed hilar gland infection on X-Ray examination, and three patients with negative sputum were found to be suffering from pulmonary tuberculosis based on physical and X-Ray examination.

Nine (9) of the above children were admitted for treatment to Nab Top Sanatorium and one to the Ladywell Sanatorium. At the Nab Top Sanatorium there is an Open Air School in which all children under treatment can continue their education as soon as they are considered fit to attend by the Medical Superintendent.

During the past year an enquiry has been made into the question as to the effect on children of school age of living in households where there is a patient snffering from Pulmonary Tuberculosis and who has a positive sputum. Some striking results have been obtained :—

Number of households containing a patient with positive sputum....	73
Number of children of school age living in these households.....	132

Cases of Tuberculosis notified during the year 1935 amongst the above children :—

Pulmonary Tuberculosis.....	1
Abdominal Tuberculosis.....	2
Tuberculous Meningitis.....	1
Tuberculous Cervical Glands.....	1

It would appear from the above results that the risk of tuberculous disease developing in children living in infected households is small. On the other hand it is impossible to ascertain the humber who may become infected in a latent form.

## 2. NON-TUBERCULOUS.

Chronic non-tuberculous pulmonary disease in children is very common and is usually a sequela of an attack of pneumonia or generalised bronchitis following measles or whooping cough. It should be recognised that measles in particular is liable to cause marked alteration in the epithelium of the bronchial mucosa and the stroma of the lungs which is followed by fibrotic changes. Broncho or lobar pneumonia in children frequently fails to resolve completely and goes on to produce pulmonary fibrosis.

These children are extremely susceptible to the polluted atmosphere of industrial towns and easily take cold, resulting in recurrent attacks of bronchitis. The pulmonary fibrosis is increased and finally bronchiectasis may supervene. A considerable number of these children are referred to the

Tuberculosis Medical Officers for physical and X-Ray examination of the chest because the physical signs resemble those of tuberculous lung disease. Many of these children find considerable benefit by attending an Open-Air School and we have also found that treatment at the Artificial Sunlight Clinic is useful in increasing their resistance.

### INSTITUTIONAL TREATMENT.

#### (a) Nab Top and Ladywell Sanatoria.

The residential institutions in connection with the Tuberculosis scheme are :—

(a) Nab Top Sanatorium, Marple.

(b) Ladywell Sanatorium, Salford.

There are 120 beds available at the Nab Top Sanatorium, Marple, for the treatment of Salford patients. These beds are occupied principally by observation, early, and intermediate cases of pulmonary tuberculosis. Occasionally, however, cases of surgical tuberculosis are admitted for treatment. Twelve of the beds which are in rather exposed shelters are not used during the six winter months.

At the Ladywell Sanatorium there are 72 beds set apart for the treatment of tuberculosis. Many cases are being admitted to the Ladywell Sanatorium while the temperature remains above normal; subsequently, on becoming afebrile, they are transferred to the Nab Top Sanatorium, Marple, for open-air sanatorium treatment. It has been found that many cases of quite moderate severity do badly at an open-air sanatorium such as Nab Top, where they are almost completely in the open air, but when admitted to the Ladywell Sanatorium, in which, while there is an abundance of fresh air, the patient is not actually living and sleeping in the open air, excellent progress is made, and the patient's temperature rapidly falls. Numbers of these patients have been transferred from the Nab Top Sanatorium, where they had been in bed continually for several months with no apparent improvement, and on transfer to the Ladywell Sanatorium immediate improvement with a fall of temperature has been noticed. It is, consequently, of great value to have two Institutions of different type for the treatment of pulmonary tuberculosis.

The Ladywell Sanatorium is also largely used for the isolation of advanced cases; such isolation is undoubtedly of great value in lessening the danger of massive infection in the homes, but is detracted from by the difficulty of keeping the patients in hospital indefinitely.

In order to centralise the isolation and treatment of the more advanced cases of Pulmonary Tuberculosis it is proposed to close the Tuberculosis Male Ward at the Municipal Hospital and to increase the accommodation at Ladywell Sanatorium to accommodate these patients. About thirty-six more beds will be required bringing the total to one hundred and eight.

The need for an X-Ray equipment at Ladywell Sanatorium has become more and more necessary and it is, therefore, proposed to remove the present installation from the Dispensary and erect the outfit at Ladywell



Hitherto patients have had to be brought every week from the Sanatorium by ambulance to the Dispensary for X-Ray examination at great inconvenience.

It will then be possible to erect a much larger installation of the latest type at the Tuberculosis Dispensary where the bulk of the primary diagnosis of cases is carried out.

Owing to the increasing number of cases requiring treatment by Artificial Pneumothorax a certain number of beds in Ladywell Sanatorium have had to be utilised during the past few years for this type of case. The Medical Superintendent at Nab Top Sanatorium, Marple (where there is no Assistant Medical Officer), has not been able to cope with the whole number of patients requiring collapse therapy. Consequently, nineteen (19) patients have undergone this form of treatment at Ladywell Sanatorium and have progressed equally as well as those at Nab Top Sanatorium.

#### **(b) Treatment of Tuberculous Skin Diseases.**

Special arrangements have been made with the Manchester and Salford Hospital for Skin Diseases for the treatment of lupus and other tuberculous skin lesions. A large number of these cases were approved for Artificial Sunlight treatment and there is no doubt that this method has a very beneficial effect on the lesions, recovery being much more rapid than in cases treated by local applications only. It is, however, necessary in order to obtain the maximum benefit that the patients should attend daily for Artificial Sunlight treatment.

The number of visits paid by patients to the Skin Hospital for treatment during 1935 was two hundred and sixty-eight (268), and the total number of tuberculous skin cases treated was forty-two (42).

It was decided to treat all suitable cases at our own Artificial Sunlight Clinic and accordingly the existing accommodation was increased and an additional carbon arc lamp installed in April, 1934. In this way patients, who had previously been treated at the Manchester and Salford Hospital for Skin Diseases, now attend our own Sunlight Clinic where the treatment is carried out at a much cheaper rate than hitherto. During 1935, ninety nine (99) patients have received treatment at the Clinic with a total number of attendances of four thousand eight hundred and twenty (4820).

#### **GENERAL REMARKS.**

The powers contained in the Salford Corporation Act, 1920, and the Public Health Act, 1925, for the compulsory removal to hospital of persons suffering from pulmonary tuberculosis have not been utilised up to the present time.

It has been found that in obstinate cases of advanced disease it is sufficient to warn the patient that compulsory powers can be put in force on application to a magistrate.

No action has been necessary under the Public Health (Prevention of Tuberculosis) Regulations, 1925, in connection with tuberculous employees in the milk trade.

TABLE 1.

SUMMARY OF WORK DONE AT THE TUBERCULOSIS  
DISPENSARY IN 1935.

Diagnosis.	Pulmonary.				Non-Pulmonary.				Total.			
	Adults		Children		Adults		Children		Adults		Children	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
A. New cases examined during the year—												
(a) Definitely tuberculous.....	188	89	5	8	10	17	10	12	198	106	15	20
(b) Doubtfully tuberculous.....	—	—	—	—	—	—	—	—	7	3	—	1
(c) Non-tuberculous.....	—	—	—	—	—	—	—	—	198	168	59	55
B. Contacts examined during the year—												
(a) Definitely tuberculous.....	1	2	—	—	—	—	—	—	1	2	—	—
(b) Doubtfully tuberculous.....	—	—	—	—	—	—	—	—	—	—	1	1
(c) Non-tuberculous.....	—	—	—	—	—	—	—	—	69	142	140	121
C. Cases written off Dispensary Register as—												
(a) Recovered .....	18	11	—	5	3	4	4	8	21	15	4	13
(b) Diagnosis not confirmed or non-tuberculous.....	—	—	—	—	—	—	—	—	285	316	208	185
D. Number of persons on Dispensary Register on December 31st—												
(a) Diagnosis completed.....	584	386	29	28	43	53	72	68	627	439	101	96
(b) Diagnosis not completed.....	—	—	—	—	—	—	—	—	7	3	1	2
1. No. of persons on Dispensary Register on January 1st.....	1337				8. No. of visits by Nurses or Health Visitors to homes for Dispensary purposes.....				6288			
2. No. of patients transferred from other areas and "lost sight of" cases returned.....	28				9. No. of—				1311			
3. No. of patients transferred to other areas and cases "lost sight of".....	154				(a) Specimens of sputum, &c., examined.....				2035			
4. Died during the year (Dispensary cases) .....	195				(b) X-Ray examinations made in connection with Dispensary work.....				553			
5. No. of attendances at Dispensary (including contacts).....	5498				10. No. of "TB plus" cases on Dispensary Register on December 31st.....				660			
6. No. of consultations with medical practitioners—					11. No. of insured persons under Domiciliary treatment on December 31st.....				1			
(a) Personal .....	7				12. No. of "Recovered cases" restored to Dispensary Register.....							
(b) Other.....	713											
7. No. of visits by Tuberculosis Officers to homes.....	68											

TABLE 2.

SHOWING PERIOD ELAPSING BETWEEN NOTIFICATION AND DEATH  
IN FATAL CASES OF PULMONARY TUBERCULOSIS.

	Number.	Per-centage.
Not Notified before death.....	13	6.81
Notified within three months of death.....	46	24.09
„ from three months to one year before death....	41	21.46
„ from one year to two years before death.....	29	15.18
Over two years.....	62	32.46

Total number of deaths, 191.

Ratio of non-notified cases to total fatal cases, 13—191.

TABLE 3.

NEW CASES AND MORTALITY DURING 1935.

Age Periods.	New Cases.				Deaths.			
	Pulmonary.		Non-Pulmonary.		Pulmonary.		Non-Pulmonary.	
	M.	F.	M.	F.	M.	F.	M.	F.
0.....	....	....	....	1	....	....	....	....
1.....	1	....	3	3	....	....	1	2
5.....	4	2	8	9	....	....	....	2
10.....	4	10	10	8	1	4	2	1
15.....	14	24	6	7	5	10	1	3
20.....	25	32	5	5	16	16	1	1
25.....	40	23	8	7	23	20	1	2
35.....	60	18	2	3	25	12	1	....
45.....	43	12	2	2	30	7	1	1
55.....	30	9	3	....	14	1	5	....
65 and upwards.....	12	3	....	1	4	3	....	1
Totals.....	233	133	47	46	118	73	13	13

TABLE 4.

OCCUPATIONS OF THE 366 CASES OF PULMONARY TUBERCULOSIS NOTIFIED.

## MALES.

1. Joiners, House Decorators and Building Trades .....	14	15. Milkmen.....	2
2. Carters and Hawkers .....	2	16. Butchers.....	3
3. Labourers and Navvies .....	26	17. Employees in Motor Trades .....	5
4. Grocers.....	3	18. Porters .....	3
5. Clerks and Typists .....	18	19. Boot Repairers .....	2
6. Makers of Wearing Apparel .....	8	20. Warehousemen.....	5
7. Colliers .....	4	21. Packers.....	2
8. Mechanics and Engineering Workers.....	51	22. Scholars.....	7
9. Seamen.....	6	23. Tramway Workers .....	4
10. Insurance Agents.....	2	24. Newsvendors.....	3
11. Printers and Bookbinding Trades .....	3	25. Commercial Travellers.....	3
12. Street Cleaners.....	2	26. Miscellaneous Occupations .....	23
13. Cotton Workers.....	4	27. No Occupation.....	22
14. Electricians.....	6	Total.....	233

## FEMALES.

1. Clerks and Typists .....	5	12. Waitresses.....	4
2. Makers of Wearing Apparel .....	20	13. Scholars.....	9
3. Shop Assistants.....	3	14. Printers and Bookbinding Trades .....	2
4. Cotton Workers.....	11	15. Dyeworkers .....	2
5. Electrical Workers.....	3	16. Miscellaneous Occupations..	3
6. Housewives.....	45	17. No Occupations.....	9
7. Charwomen and Laundresses .....	6	18. Nurses .....	2
8. Confectioners.....	2	19. School Teachers.....	2
9. Boxmakers.....	2	Total.....	133
10. Domestic Servants .....	3		
11. Packers.....	2		

During the year 1935, 93 new notifications of non-pulmonary tuberculosis have been received.

The new cases of non-pulmonary tuberculosis notified are classified in the following table :—

	Glands.	Bones.	Abdo- men.	Skin.	Men- inges.	Other forms.	Totals.
Under 10 years.....	7	5	4	....	4	4	24
10 to 20 years.....	8	6	10	1	3	2	30
20 to 30 „ .....	9	4	1	3	2	2	21
30 to 40 „ .....	3	3	1	1	....	1	9
Over 40.....	1	4	1	1	....	2	9
Totals.....	28	22	17	6	9	11	93

**NAB TOP SANATORIUM.**

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**Annual Report.**

**RESIDENT STAFF.**—Medical Superintendent, Matron, Home Sister, two Ward Sisters, eleven Nurses, Cook, Laundress, seventeen Maids and Lodge Porter.

**NON-RESIDENT STAFF.**—Engineer, School-Mistress, Porter, two Gardeners and Labourer.

**ACCOMMODATION.**—From April 1st to September 30th each year there is accommodation in the Sanatorium for 120 patients (62 adult males, 42 adult females, 8 male children, and 8 female children).

From October 1st to March 31st, accommodation is slightly less, namely 108 (50 adult males, 42 adult females, 8 male children, and 8 female children).

**TYPE OF CASE TREATED.**—The Sanatorium is used for the treatment of early and intermediate cases of Phthisis.

A few advanced cases who show good resistance to the disease are also treated. A number of "observation" cases are admitted.

**LINES OF TREATMENT.**—The treatment adopted is chiefly Hygienic—open air, rest and graduated exercise.

On admission, patients, after a period of rest in bed, are put on walking exercise, the distance being gradually increased. Afterwards this is supplemented by light ward work. Those who show a satisfactory resistance are then placed on graduated work, beginning with light gardening work and rising to heavier work such as grass cutting and lawn rolling, wheelbarrow work and digging. Walking exercise is taken round two fields, the circumference of that reserved for women being one-quarter mile, and that for men one-third of a mile.

An increasing number of patients are being treated by means of Artificial Pneumothorax, care being taken to limit the treatment to cases who are really suitable. Last year 23 cases were induced at the Sanatorium and refills carried out; the stay of these patients averaging 5 months. In addition refills were carried out on patients where the induction had taken place before 1935 making a grand total of refills for 1935 of three hundred and thirteen. On leaving the Sanatorium the refills are continued at the Tuberculosis Dispensary, Regent Road, Salford.

The X-Ray apparatus installed in late 1930 has been of great benefit in this work, as being the controlling agent in spacing the refills in Artificial Pneumothorax cases. In 1935, the X-Ray apparatus was used over 400 times both for controlling these cases and in routine work. 220 X-Ray photographs were also taken at the end of ordinary Sanatorium treatment, and these proved very beneficial in ascertaining the amount of improvement effected during the stay here of these patients.



An increasing number of patients are being treated by Gold Salts. The results, in certain types of cases, are encouraging.

Treatment by Nordalin was tried in a small number of cases and excellent results were obtained in approximately 25 per cent. of those to whom it was administered. As in all other lines of treatment, cases must be carefully chosen for treatment by Gold and Nordalin as not every type of pulmonary tuberculosis will react favourably to these aids.

FARM.—A poultry farm maintained on the premises supplies many of the eggs required for consumption. Most of the vegetables used in this Institution are also grown in the grounds of the Sanatorium.

By the generosity of the Committee a small greenhouse was erected in May, 1935, adjoining the school in the Sanatorium, and this has proved to be extremely useful as fruit and flower bearing plants are now grown which require more sheltered conditions. It is undoubtedly an added interest which is greatly appreciated by the children.

RECREATION.—The dining hall is set apart for the use of patients every week-day from 5 to 6 p.m. and every Saturday evening after supper, where whist and other card games are indulged in. A wireless set is in daily use, each bed being provided with a pair of ear-phones. There is also a loud speaker in the dining hall. Concerts are arranged about once a month from October to April, given by voluntary entertainers, and on many occasions during the winter plays have been staged.

There is also a large bowling green and clock golf green for the men, and a bowling and croquet green for women on which varied and interesting competitions are frequently held during the summer months.

CANTEEN.—A canteen has been established in the grounds wherein are sold those articles likely to be used in everyday life.

EDUCATION.—The Medical Superintendent at frequent intervals delivers lectures to the patients on such subjects as "Pulmonary Tuberculosis," "Rules of Health" and "The Care of the Mouth and Teeth." It is hoped that on leaving, patients may carry out the instructions given in these lectures and thus minimise the spread of infection in their own homes.

An open-air school, under the guidance of a competent teacher, has been established for patients under 16 years of age. This has been a boon to those children whose state of health has not permitted them to attend the ordinary school at home. No child is allowed to attend school unless certified physically fit by the Medical Superintendent. It may be of interest to know that during the last two years a large number of prizes have been won by the School Children for educational subjects and handicrafts in competition with children from ordinary Day Schools in the Manchester area.

Appended is a table showing the number of admissions, etc., and the number of patient-days during the year 1935:—



TABLE A—(Nab Top Sanatorium).

SHOWING THE NUMBER OF ADMISSIONS, ETC., AND THE NUMBER OF  
"PATIENT-DAYS" DURING THE YEAR 1935.

	Total Adults.		Children under 15.			Totals.		
	Males	Females	Males	Females	Both	Males	Females	Both
Number of Patients admitted prior to 1935 who remained in Sanatorium for some part of 1935.....	20	21	9	5	14	29	26	55
Number of "Patient-days" in 1935 for patients admitted prior to 1935 who remained in Sanatorium for some part of 1935.....	2958	3402	1224	388	1612	4182	3790	7972
Total admissions, 1935.....	122	74	21	17	38	143	91	234
Total discharges and deaths, 1935.....	117	74	22	18	40	139	92	231
Number of "Patient-days" for persons admitted during 1935.....	12162	8583	1561	1125	2686	13723	9708	23431
Total number of "Patient-days" for 1935.....	15120	11985	2785	1513	4298	17905	13498	31403
Average number of Patients in Sanatorium each day during 1935.....	40.4	33.2	8.2	4.2	12.4	48.6	37.4	86.0

NOTE.—The term "Patient-days" represents the product of the number of patients and the number of days spent by those patients in the Sanatorium.

**TABLE B.—PATIENTS DISCHARGED FROM NAB TOP SANATORIUM DURING 1935.**

Duration of Residential Treatment in Institution												
Condition at Time of Discharge.	Under 3 Months, but exceeding 28 days.			3 to 6 Months.			6 to 12 Months.			Over 12 Months.		
	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.
Pulmonary Tuberculosis.....												
Quiescent.....	1	...	...	9	5	9	5	5	1	...	...	...
Not Quiescent.....	35	15	10	28	21	...	13	8	3	3	4	...
Died.....	...	...	...	1	...	...	...	...	...	...	1	...
Totals.....	36	15	10	38	26	9	18	13	4	3	5	...
Non-Pulmonary Tuberculosis.....												
Quiescent.....	...	1	...	1	...	1	...	1	...	...	...	...
Not Quiescent.....	1	1	2	...	3	...	...	1	2	...	...	...
Died.....	...	...	...	...	...	...	...	...	...	...	...	...
Totals.....	1	2	2	1	3	1	...	2	2	...	...	...
Observation for Purposes of Diagnosis.....												
							Under 4 weeks.			Over 4 weeks.		
Tuberculous.....							2			1		
Non-Tuberculous.....							1			1 5 1 1 5		
Doubtful.....							...			...		

## LADYWELL SANATORIUM

TABLE SHOWING THE NUMBER OF ADMISSIONS, ETC., AND THE NUMBER  
OF "PATIENT-DAYS" FOR 1935.

## TUBERCULOSIS CASES.

	Males.	Females	Totals.
Total Number of Admissions during 1935	160	130	290
Number of Persons Admitted prior to 1935 who remained in Hospital for some part of 1935.....	26	28	54
Total Number of Discharges and Deaths during 1935.....	153	138	291
Patients in Hospital on the 31st December, 1935.....	33	20	53
Number of "Patient-days" for Persons Admitted during 1935.....	9531	8024	17555
Number of "Patient-days" (in 1935) for Persons Admitted prior to 1935 who remained in Hospital for some part of 1935.....	2025	2281	4306
Total Number of "Patient-days" for 1935.	11556	10305	21861
Average Number of Patients in Hospital each day during 1935.....	31.66	28.15	59.81

## LADYWELL SANATORIUM AND ISOLATION HOSPITAL.

## Report for the Year 1935.

At the beginning of the year there were 298 cases remaining in Hospital ; these, with the 2,204 admitted during the year, made a total of 2,502 cases under treatment. Of this total 2,140 were discharged, 136 died and 226 were in Hospital at the end of the year. The number of cases treated, 2,502, compares with 2,822 in 1934, and with 2,372 the average of the cases treated for the five years ended December 31st, 1934.

The cases treated were as follows :—

Scarlet Fever.....	722
Mixed Infections.....	35
Measles.....	83
Enteric Fever.....	6
Diphtheria.....	813
Erysipelas.....	98
Puerperal Fever.....	28
Tuberculosis.....	335
Other Diseases.....	382
	<hr/> 2502 <hr/>

The number of cases admitted from Out-districts was 419, as compared with 379 in 1934. The daily average number of patients in 1935 was 250.0 ; the highest being 328 on February 7th, and the lowest 189 on July 10th ; 2,204 patients were admitted during the year, as compared with 2,541 in 1934 and with 2,120 the average for the five years ended December 31st, 1934. The following summary shows the diagnosis of the cases before admission and after observation in Hospital :—

	Diagnosis before Admission.	Diagnosis after Observation
Scarlet Fever.....	686	646
Mixed Infections.....	20	29
Measles.....	82	83
Enteric Fever.....	8	6
Diphtheria.....	858	672
Erysipelas.....	114	92
Puerperal Fever.....	27	25
Tuberculosis.....	292	281
Other Diseases.....	117	370
	<hr/> 2,204 <hr/>	<hr/> 2,204 <hr/>

Details of the alterations in diagnosis will be found in the tables 5 and 6, pages 22 and 23. A tabulation of cases classified as "Other Diseases" will be found on page 16.

MIXED DISEASES.—Thirty-three of the patients discharged were found to be suffering from two distinct diseases, as follows :—

Chicken Pox and Eczema.....	1
Chicken Pox and Tonsillitis.....	2
Diphtheria and Chicken Pox.....	2
Diphtheria and Scarlet Fever.....	14
Diphtheria and Tonsillitis.....	1
Diphtheria and Whooping Cough.....	4
Measles and Impetigo.....	1
Scarlet Fever and Whooping Cough.....	7
Whooping Cough and Chicken Pox.....	1
	—
	33
	—

DEATHS FROM MIXED DISEASES.—In this group the concurrent affections directly or indirectly caused a fatal termination in one case :—

Scarlet Fever and Pneumonia.....	1
----------------------------------	---

The average stay in Hospital for all mixed diseases cases discharged well in 1935 was 46.4 days, and for the one fatal case 2 days.

CROSS-INFECTION.—As in previous reports it may be stated **that** the position is still unsatisfactory. Cross-infection in the large wards is difficult to prevent, and the isolation accommodation is inadequate. However, the provision of a thirty-two bed cubicle block has now been sanctioned, and it is hoped that the building will be started this year.

The number of patients discharged in 1935 who contracted another infection was as follows :—

Sent in as :—	Secondary Infection.	
Diphtheria.....	Erysipelas .....	1
Diphtheria.....	Measles .....	2
Diphtheria.....	Scarlet Fever.....	6
Diphtheria.....	Whooping Cough .....	1
Erysipelas .....	Diphtheria and Chicken Pox.....	1
Erysipelas .....	Chicken Pox.....	2
Scarlet Fever.....	Chicken Pox.....	1
Scarlet Fever.....	Diphtheria .....	26
Scarlet Fever.....	Erysipelas .....	1
Scarlet Fever.....	Whooping Cough .....	1
Whooping Cough.....	Chicken Pox.....	1
		—
		43
		—

The average stay in Hospital for the 43 cross-infected cases discharged well in 1935 was 67.2 days.



The total number of cases discharged in 1935 was as follows :—

Disease.	Number.
Scarlet Fever.....	668
Mixed Infections.....	33
Measles.....	55
Enteric Fever.....	5
Diphtheria.....	699
Erysipelas.....	88
Puerperal Fever.....	25
Tuberculosis.....	214
Other Diseases.....	353
	<hr/> 2,140 <hr/>

The average stay in Hospital for all cases discharged during 1935 was :—  
for scarlet fever 37.2 days ; for mixed infections 46.4 ; for measles 20.7 ; for enteric fever 80.1 ; for diphtheria 44.5 ; for erysipelas 31.3 ; for puerperal fever 39.9 ; for tuberculosis 80.8 ; for other diseases 21.2.

DEATHS.—The total number of fatal cases in 1935 was :—

Disease.	Number.
Mixed Infections.....	1
Measles.....	3
Diphtheria.....	36
Erysipelas.....	6
Puerperal Fever.....	1
Tuberculosis.....	68
Carbuncle.....	3
Cerebro-spinal Fever.....	1
Intra-thoracic Malignant Disease.....	1
Leukaemia.....	1
Ludwig's Angina.....	1
Pemphigus Neonatorum.....	1
Pneumonia.....	3
Post-diphtheritic Paralysis.....	1
Streptococcal Sore Throat.....	1
Whooping Cough.....	8
	<hr/> 136 <hr/>

The average stay in Hospital for all fatal cases, excepting advanced tuberculosis, was 11.44 days.

The daily average number of patients in Hospital in 1935 was 250.0, as compared with 266.0 in 1934 and with 246.2 the daily average of the number in the five years ended December 31st, 1934.

There were remaining in Hospital on December 31st, 1935, 226 cases, as compared with 298 last year. The cases remaining on 31st December, 1935, were:—scarlet fever 54; mixed infections 1; measles 25; enteric fever 1; diphtheria 78; erysipelas 4; puerperal fever 2; tuberculosis 53; and other diseases 8.

Fifty-two of the cases remaining were from Out-districts, as compared with 49 the year before.

### DETAILED INFORMATION ABOUT SOME DISEASES.

#### Scarlet Fever.

The number of cases admitted was 646, as against 551 in 1934. 686 cases were certified as having scarlet fever, but in 63 cases the diagnosis had to be revised. In addition, 8 cases admitted as mixed infections, 1 as measles and 14 as diphtheria proved to be scarlet fever. 668 cases were discharged well during the year, as against 570 last year. There were no deaths from this disease.

The type of the disease was mild. Scarlatinal antitoxin was given intramuscularly in 5-10 c.c. doses to all but the very mild cases. The more important complications were as follows:—

	Cases Affected.	Percentage of Discharged Cases.
Adenitis and Abscess (5).....	32	4.8
Rhinitis.....	12	1.8
Otorrhœa and Otitis Media (14).....	36	5.4
Relapse.....	2	0.3

Other complications were as follows:—Albuminuria 1; acute mastoiditis 1; blepharitis 1; boil 2; bronchitis 4; conjunctivitis 1; coryza 2; dermatitis 1; diarrhœa 1; eczema 1; enteritis 1; hordeolum 2; herpes 1; impetigo 3; incisions 7; intertrigo 1; myringotomy 1; nephritis 2; paronychia 9; quinsy 1; rheumatic fever 1; rheumatism 1; scald 1; septic spots 1; septic wound 1; tonsillitis 9.

Twenty-nine cases contracted another infection whilst in Hospital:—chicken pox 1; diphtheria 26; erysipelas 1; whooping cough 1.

The average stay in Hospital for all cases discharged well was 37.2 days.

The following table indicates the period of residence of the 639 cases of scarlet fever uncomplicated with another disease who were discharged well in 1935 :—

Week of Discharge	Number of days in Residence when Discharged.							Number of cases in each Day.							No. of Cases in each week.
Under fourth .....															1
Fourth.....	22	23	24	25	26	27	28	1	2	....	2	10	25	55	95
Fifth. ....	29	30	31	32	33	34	35	86	71	78	59	46	23	15	378
Sixth.....	36	37	38	39	40	41	42	19	12	15	11	15	10	5	87
Seventh.....	43	44	45	46	47	48	49	7	4	5	5	4	3	2	39
Eighth.....	50	51	52	53	54	55	56	3	2	....	3	1	2	2	13
Ninth.....	57	58	59	60	61	62	63	....	4	2	1	2	....	2	11
Tenth .....	64	65	66	67	68	69	70	....	....	....	1	....	1	....	2
Over Tenth.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	22
Total Number of Cases .....															639

RETURN CASES.—Information about these is usually obtainable from Salford only. 8 such cases were reported. This gives a return rate of 1.2 per cent. for Salford.

#### Schick Test in Scarlet Fever and Other Diseases.

The following table shows the age distribution of patients suffering from scarlet fever and other diseases who underwent the Schick test :—

	Age Periods.												Total
	Under 1 Yr.	1	2	3	4	5	6	7	8	9	10	Over 10	
Positive....	....	....	....	1	4	3	4	2	2	4	3	10	33
Negative .	....	....	....	2	1	5	2	5	6	11	7	35	74
Totals...	....	....	....	3	5	8	6	7	8	15	10	45	107

Immunised : 3 doses 89, 2 doses 23, 1 dose 14.

1 dose Alum Toxoid 37.

### Diphtheria.

672 cases were admitted and 141 remained from 1934 ; of these 699 were discharged well, 36 died, and 78 remained in Hospital at the end of the year. 858 cases were admitted certified as diphtheria, but in 191 cases the diagnosis had to be revised ; in addition, 2 cases admitted as scarlet fever, 2 admitted as mixed infections, and 1 other disease proved to be diphtheria. The disease was of an exceptionally malignant type as shown by the large number of severe cases. In a large number (156) of the most severe cases part of the antitoxin was given intravenously and in many instances repeatedly.

#### TYPE OF DISEASE.

Of the discharged cases, 604 were faucial, 8 laryngeal, 21 nasal, 7 faucial and laryngeal and 3 faucial and nasal. There were also 56 cases of bacteriological diphtheria.

#### Faucial Diphtheria.

In 639 cases, including 35 fatal ones, the faucial region of the throat was affected.

MILD.—239 cases were mild, the deposit on the throat being localised to the tonsils with little or no toxæmia. The average amount of serum given was 13,623 units to the discharged cases. 19 cases had antitoxin before admission.

COMPLICATIONS AND SEQUELAE.—Adenitis 1 ; abscess 2 ; bronchitis 1 ; coryza 1 ; eczema 1 ; endocarditis 1 ; endocarditis, adenitis, carrier 1 ; impetigo 1 ; otitis media 4 ; otitis media and paronychia 1 ; otorrhœa 6 ; otorrhœa and pyelitis 1 ; paronychia 3 ; peritonsillar abscess 2 ; rheumatic fever 1 ; scabies 2 ; styne 1 ; tonsillitis 8 ; tonsillitis and intertrigo 1 ; whitlow and furunculosis 1.

One case contracted Measles.

One case contracted Scarlet Fever.

MODERATE.—In 175 cases the membrane was more extensive and was accompanied by toxæmia. The average amount of serum given was 33,962 units to the recovered cases. 9 cases received antitoxin before admission.

COMPLICATIONS AND SEQUELAE.—Abscess 4 ; adenitis 1 ; blepharitis 1 ; bronchitis 1 ; conjunctivitis 1 ; enteritis 1 ; impetigo 1 ; otorrhœa 6 ; palatal paresis 1 ; paronychia 2 ; pneumonia and empyema 1 ; pyelitis 1 ; relapse 1 ; rhinitis 1 ; tonsillitis 1.

Two cases contracted Scarlet Fever.

One case contracted Whooping Cough.

SEVERE.—225 cases, including 35 fatal ones, were of the severe type. The average amount of serum given for the 190 cases discharged was 69,779 units and for the 35 fatal cases 97,257 units. 8 of the discharged cases and 3 of the fatal cases received antitoxin before admission.

COMPLICATIONS AND SEQUELAE.—Adenitis 3; cycloplegia 1; mastoiditis, rhinitis, otorrhœa 1; otitis media, abscess 1; otorrhœa 1; otitis media 1; palatal paresis 20; peritonsillar abscess 1; palatal and pharyngeal paresis 2; palatal paresis, otorrhœa 1; paronychia 1; palatal, pharyngeal and lower limb paresis 1; palatal and pharyngeal paralysis, tonsillitis 1; palatal paresis, otorrhœa, abscess (thigh) 1; palatal and rectus paresis, styes 1; pharyngeal paralysis 1; palatal, pharyngeal and diaphragmatic paralysis 1; serum rash 1; tonsillitis 2.

One case contracted Erysipelas.

Three cases contracted Scarlet Fever.

COMPLICATIONS OF FATAL CASES.—Circulatory paralysis 24; palatal pharyngeal and circulatory paralysis 1; palatal, pharyngeal and diaphragmatic paralysis 2; anuria, circulatory paralysis 1; L. otorrhœa, circulatory paralysis 2; tracheotomy, tracheal stenosis 1; palatal paralysis, circulatory paralysis 1.

### **Laryngeal Diphtheria.**

In 9 cases, including 1 fatal case, the larynx was involved.

MILD.—In 4 cases the laryngeal obstruction was slight. The average amount of serum given was 13,000 units.

COMPLICATIONS AND SEQUELAE.—Nil.

MODERATE.—In 2 cases the laryngeal obstruction was moderately severe. The average amount of serum given was 36,000 units.

COMPLICATIONS AND SEQUELAE.—Nil.

SEVERE.—In 3 cases, including 1 fatal case, the obstruction to the breathing was severe. 2 cases required tracheotomy. The average amount of serum given to the discharged cases was 16,000 units, and to the fatal case 44,000 units.

COMPLICATIONS AND SEQUELAE.—Nil.

### **Faucial and Laryngeal Diphtheria.**

In 7 cases the fauces and larynx were involved.

MILD.—The 1 mild case received 20,000 units of antitoxin.

COMPLICATIONS AND SEQUELAE.—Nil.

MODERATE.—The 1 moderate case received 40,000 units of antitoxin.

COMPLICATIONS AND SEQUELAE.—Nil.



SEVERE.—The 5 severe cases received an average of 61,600 units of antitoxin. 1 case received antitoxin before admission.

COMPLICATIONS AND SEQUELAE.—Adenitis, otorrhœa 1; otitis media 1; palatal paralysis, otorrhœa 1.

### Nasal Diphtheria.

There were 21 cases of this type.

MILD.—The average amount of serum given to the 20 mild cases was 9,800 units; 2 cases received antitoxin before admission.

COMPLICATIONS AND SEQUELAE.—Carrier 1; colitis 1; otitis media 1; otorrhœa 1; polypus 1.

One case developed Measles.

MODERATE.—The 1 moderate case received 40,000 units of serum.

COMPLICATIONS AND SEQUELAE.—Nil.

### Faucial and Nasal Diphtheria.

There were 3 cases of this type of diphtheria. An average of 10,000 units was given to the 2 mild cases and the 1 moderate case received 24,000 units.

COMPLICATIONS AND SEQUELAE.—Nil.

The following table summarises the sites of membrane in the total clinical cases discharged :—

Sites of Membrane.	Mild.		Moderate.		Severe.		Total.	
	Recovered	Died	Recovered	Died	Recovered	Died	Recovered	Died
Faucial.....	239	....	175	....	190	35	604	35
Laryngeal.....	4	....	2	....	2	1	8	1
Faucial and Laryngeal.....	1	....	1	....	5	....	7	....
Nasal.....	20	....	1	....	....	....	21	....
Faucial and Nasal ....	2	....	1	....	....	....	3	....
Totals.....	266	....	180	....	197	36	643	36

DIPHThERITIC PARALYSIS.—31, or 4.8 per cent., of the clinical cases discharged had paralysis in one form or another whilst in Hospital.

COMPLICATIONS.—114, or 17.7 per cent., of the recovered cases developed one or more complications. This figure does not include serum rashes.

TRACHEOTOMY was performed in 4 instances without any fatalities.

FATALITY RATE.—36, or 5.6 per cent., of the clinical cases admitted proved fatal.

ANTITOXIN.—39, or 6.06 per cent., of the cases discharged and 3 of the fatal cases had antitoxin before admission to the Hospital. The average amount of serum given in Hospital in the recovered cases was 31,667 units and 94,666 units in the fatal cases. In addition, 156 cases, including 29 fatal cases, had part of the serum injected intravenously.

CROSS-INFECTION.—10 cases contracted other infections whilst in Hospital :—Erysipelas 1 ; measles 2 ; scarlet fever 6 ; whooping cough 1.

AVERAGE STAY.—The average stay in Hospital for all cases discharged well was 44.5 days, and for the fatal cases 10.3 days.

#### Dick Test in Diphtheria.

The Dick test was performed in 611 cases of diphtheria. 312 of these were positive and 299 negative. The positive reactors were inoculated with scarlet fever prophylactic at intervals of 4 days (500, 2,000, 6,000, 15,000 skin test doses).

Age Periods.													Totals
	Under 1 Yr.	1	2	3	4	5	6	7	8	9	10	Over 10	
Positive....	2	2	21	31	32	53	34	29	28	20	15	45	312
Negative .	....	....	11	25	24	25	28	24	14	20	24	104	299
Totals..	2	2	32	56	56	78	62	53	42	40	39	149	611

#### Enteric Fever.

Eight cases were admitted, but in 2 instances the diagnosis was revised. 5 cases were discharged well and 1 case was in Hospital at the end of the year.

The average stay in Hospital for all cases discharged well was 80.1 days.

COMPLICATIONS.—Nil.

### Puerperal Fever.

Twenty-seven cases were admitted, but in 2 cases the diagnosis was revised.

Of the 28 cases under treatment 25 were discharged, 1 died and 2 were in Hospital at the end of the year.

The 25 discharged cases were classified as follows:—Puerperal fever 11; puerperal sepsis 8; puerperal sapremia 1; puerperal scarlatina 1; septic abortion 3; and the 1 fatal case as puerperal fever.

The average stay in Hospital for the discharged cases was 39.9 days, and for the fatal case 12 days.

COMPLICATIONS IN DISCHARGED CASES.—Anæmia 1; mammary abscess incisions 1; oophoritis, laparotomy, appendicectomy 1; parametritis 1; phlegmasia alba dolens 1; pyelitis 1; sub-diaphragmatic abscess 1.

COMPLICATIONS IN FATAL CASES.—Phlegmasia alba dolens, pulmonary embolism 1.

There were 16 babies admitted with their mothers.

### Erysipelas.

144 cases were admitted, but in 22 instances the diagnosis had to be revised. Of the 98 cases under treatment 88 were discharged well, 6 died and 4 were in Hospital at the end of the year.

The average stay in Hospital for the discharged cases was 31.3 days, and for the fatal cases 17.83 days.

COMPLICATIONS OF THE DISCHARGED CASES.—Abscess (thigh) 1; abscess, incision 2; bronchitis, emphysema 1; cellulitis 5; otorrhœa 6; abdominal perforation 1; relapse 1; serum rash 1.

COMPLICATIONS OF FATAL CASES.—Bronchopneumonia 1; bronchopneumonia, bronchitis 1; bronchitis, emphysema 1; cellulitis, bronchitis 1; relapse, bronchitis 1.

### Measles.

A ward was opened for measles, the disease being very prevalent.

Eighty-two cases were admitted, but in 5 instances the diagnosis had to be revised; in addition, 4 cases sent in as scarlet fever, 1 as mixed infections, and 1 as diphtheria proved to be measles. Of the 83 cases under treatment, 55 were discharged, 3 died and 25 were in Hospital at the end of the year.

The average stay in Hospital for the discharged cases was 20.7 days, and for the fatal cases 9.67 days.

COMPLICATIONS OF THE DISCHARGED CASES.—Bronchopneumonia 1; gastritis, malnutrition 1; measles, abscess (buttock), otorrhœa 1; tonsillitis 1.

COMPLICATIONS OF THE FATAL CASES.—Bronchopneumonia 1.

STAFF.—On December 31st, 1935, the resident staff of the Sanatorium consisted of the following :

Medical Superintendent .....	1
Assistant Medical Officers.....	2
City Bacteriologist.....	1
Matron.....	1
Assistant Matron.....	1
Stores Sister.....	1
Sister Tutor.....	1
Night Sister.....	1
Ward Sisters.....	8
Staff Nurses.....	16
Assistant Nurses.....	9
Probationers .....	32
Domestics.....	37
Laundress.....	1
Lodge Porters.....	2
<b>Total Resident Staff.....</b>	<b>114</b>

The Non-resident Staff consisted of :—

Visiting Aural Surgeon.....	1
Tuberculosis Officers.....	2
Clerk.....	1
Junior Clerk.....	1
Engineer.....	1
Plumber.....	1
Firemen.....	3
Gardener.....	1
Assistant Gardeners.....	2
Porters.....	5
Seamstresses .....	2
Cleaners.....	2
<b>Total Non-resident Staff .....</b>	<b>22</b>

HEALTH OF STAFF. The following were the illnesses :—Abdominal pains 2; abscesses 3; chest pains 1; colds 12; erythema 2; fainting attacks 2; fracture tibia and fibula 1; inflammation after vaccination 1; influenza 6; jaundice 2; joint pains 2; laryngitis 1; osteomyelitis 1; pleurisy 1; scalds 2; scarlet fever 3; septic finger 1; sore feet 2; sore throat 21; swollen glands 1; synovitis of knee 1; tuberculosis 1; vomiting attacks 3.

The staff lost 1,018 working days through illness.

The staff, both nurses and maids, are tested by the Schick and Dick Tests, and, if positive, immunised against diphtheria and scarlet fever.

Seventy-five were Schick tested and 19 were positive, these were inoculated with three doses of Toxoid at fortnightly intervals, and on retest proved to be negative.

Sixty-eight had the Dick test done, 9 being positive, these were inoculated with 500, 2,000, 6,000 and 15,000 skin test doses of Scarlatinal Antitoxin, and retest a month later proved to be negative.

One staff-nurse was Dick positive on joining ; six days later she contracted Scarlet Fever in a moderate form, and made a complete recovery.

WORK OF THE TRAINING SCHOOL.—During the year 8 nurses passed the Preliminary and 8 the Final State examinations. The usual course of lectures was given by the Medical Staff and the Sister Tutor.

#### Operating Theatre.

The number of operations in the theatre was 6, all requiring general anæsthesia ; minor operations are not included ; numerous incisions were done on the wards, mostly requiring local anæsthesia only.

Disease.	Complications.	Operation.	Recov.	Died.	Total.
Diphtheria .....	Mastoiditis, Rhinitis, Otorrhœa.	Tonsillectomy .....	1	—	1
Puerperal Fever.	Oophoritis.....	Appendicectomy and Drainage .....	1	—	1
Diphtheria .....	—	Left Schwartz's oper- ation .....	1	—	1
Septic Abortion	—	Dilatation and Curetting	1	—	1
Scarlet Fever .....	Left Otorrhœa Acute Mas- toiditis.	Schwartz's Operation	1	—	1
Measles.....	Otorrhœa R. and L. Acute Mastoiditis (L).	Left Mastoid.....	1	—	1
			6	—	6

#### Bed Isolation Ward.

This ward contains 16 beds. Each patient is nursed separately from the others and nothing which has been in contact with the patient or anything from his bed is allowed to touch any other patient or bed unless it has been sterilised. This sterilisation is done by steam if possible, or by disinfection with liquid disinfectants. Nurses have to wear separate gowns, and scrub their hands every time they attend a patient.

Free ventilation is also insisted upon.

All kinds of diseases were admitted. The ward was busy all through the year, the demand for isolation being always great.

200 cases were admitted during the year.



The following is a table of the diseases :—

Sent in as :—		Diagnosis after Observation.	
Scarlet Fever .....	72	Scarlet Fever.....	24
		Adenitis .....	1
		Bronchitis .....	2
		Colitis .....	1
		Coryza.....	2
		Diphtheria .....	2
		Erythema .....	1
		Gastritis .....	1
		Impetigo.....	1
		Influenza .....	1
		Otitis Media .....	1
		Peridental Abscess .....	1
		Pleurisy .....	1
		Rubella .....	4
		Scarlet Fever and Chicken Pox.....	1
		Scarlet Fever and Diphtheria.....	7
		Scarlet Fever and Measles.....	1
		Scarlet Fever and Rhinitis.....	1
		Tonsillitis .....	18
Diphtheria.....	95	Diphtheria .....	42
		Adenitis .....	1
		Diphtheria and Chicken Pox.....	1
		Diphtheria and Scarlet Fever.....	8
		Laryngitis .....	3
		Laryngitis and Bronchitis .....	1
		Retro-pharyngeal Abscess .....	1
		Scarlet Fever.....	6
		Tonsillitis and Chicken Pox.....	1
		Tonsillitis .....	31
Erysipelas .....	4	Erysipelas .....	1
		Erysipelas and Chicken Pox .....	1
		Herpes (face).....	1
		Impetigo.....	1
Whooping Cough .....	7	Whooping Cough .....	4
		Bronchopneumonia .....	1
		Chicken Pox and Whooping Cough .....	1
		Whooping Cough and Broncho- pneumonia .....	1
Mumps.....	2	Mumps .....	1
		Adenitis .....	1
Measles.....	2	Measles .....	2
Encephalitis .....	1	Acidosis .....	1
Chicken Pox.....	1	Chicken Pox .....	1
Meningitis .....	2	Influenza.....	1
		Pemphigus Neonatorum .....	1
Pemphigus Neonatorum .....	1	Pemphigus Neonatorum .....	1
Vaccinia .....	1	Vaccinia .....	1
Diphtheria and Meningitis .....	1	Tonsillitis .....	1
Whooping Cough, ? Fracture base of skull .....	1	Whooping Cough .....	1
Chicken Pox and Scabies .....	1	Chicken Pox .....	1
Measles and Scarlet Fever .....	1	Tonsillitis .....	1
Diphtheria and Scarlet Fever .....	5	Scarlet Fever .....	2
		Diphtheria .....	2
		Rhinitis .....	1
Diphtheria and Whooping Cough .....	1	Diphtheria and Whooping Cough.....	1
Whooping Cough and Broncho- pneumonia .....	2	Whooping Cough and Broncho- pneumonia .....	2
	200		200

TABULATION OF CASES WHICH HAVE BEEN CLASSIFIED AS  
" OTHER DISEASES " AFTER OBSERVATION.

Abscess .....	2	Laryngitis .....	10
"  peritonsillar .....	5	Leukemia .....	1
"  peridental .....	1	Ludwigs' angina .....	1
"  post-pharyngeal .....	1	Meningismus .....	1
Acidosis .....	1	Mumps .....	1
Adenitis .....	3	Observation .....	9
Bronchitis .....	5	Otorrhœa .....	2
Bronchiectasis .....	1	Pemphigus Neonatorum.....	2
Cerebro-spinal Fever .....	1	Peritonitis .....	1
Chicken Pox .....	22	Pharyngitis .....	1
Coryza .....	3	Pneumonia .....	7
Colitis .....	2	Post-diphtheritic paralysis .....	1
Cellulitis .....	1	Pyelitis .....	1
Carbuncle.....	4	Rheumatism .....	2
Conjunctivitis .....	2	Rhinitis .....	3
Dermatitis .....	2	Rubella .....	7
Dysentery.....	1	Scald .....	1
Encephalitis Lethargica .....	1	Septic finger.....	1
Enteritis .....	1	"  rash .....	1
Erythema.....	8	"  sore face .....	2
Gastritis .....	1	"  throat .....	3
Herpes .....	3	Sore throat .....	1
Impetigo .....	4	Specific throat.....	1
Influenza .....	3	Thrush .....	1
Influenzal cold.....	3	Tonsillitis .....	160
Injury to Arm.....	1	Vaccinia .....	1
Intestinal obstruction.....	1	Varicose veins .....	1
Intra-thoracic malignant		Vincent's angina.....	2
disease .....	1	Whooping Cough .....	45
		With mother .....	16

TABLE I.

STATEMENT OF THE NUMBER OF PATIENTS UNDER TREATMENT IN  
LADYWELL SANATORIUM IN 1935.

	Males.		Females.		Totals.
	Under 5 years.	Over 5 years.	Under 5 years.	Over 5 years.	
1.—PATIENTS REMAINING IN HOSPITAL ON DECEMBER 31ST, 1934, AFFECTED WITH :					
Scarlet Fever.....	12	20	15	29	76
Mixed Infections.....	1	3	2	....	6
Measles.....	....	....	....	....	....
Enteric Fever.....	....	....	....	....	....
Diphtheria.....	16	60	10	55	141
Erysipelas.....	....	4	....	2	6
Puerperal Fever.....	....	....	....	3	3
Tuberculosis.....	....	26	....	28	54
Other Diseases.....	6	2	1	3	12
Totals.....	35	115	28	120	298
2.—ADMITTED DURING THE YEAR ENDED DECEMBER 31ST, 1935, AFFECTED WITH :					
Scarlet Fever.....	86	202	93	265	646
Mixed Infections.....	10	5	5	9	29
Measles.....	35	14	23	11	83
Enteric Fever.....	1	3	....	2	6
Diphtheria.....	79	215	77	301	672
Erysipelas.....	2	48	....	42	92
Puerperal Fever.....	....	....	....	25	25
Tuberculosis.....	....	154	....	127	281
Other Diseases.....	70	91	70	139	370
Totals.....	283	732	268	921	2204
Totals under treatment, 1935.....	318	847	296	1041	2502
3.—OF THE ABOVE THERE WERE DISCHARGED RECOVERED FROM :					
Scarlet Fever.....	91	211	101	265	668
Mixed Infections.....	11	8	6	8	33
Measles.....	23	8	15	9	55
Enteric Fever.....	1	3	....	1	5
Diphtheria.....	80	246	72	301	699
Erysipelas.....	1	47	....	40	88
Puerperal Fever.....	....	....	....	25	25
Tuberculosis.....	....	105	....	109	214
Other Diseases.....	66	86	64	137	353
Totals ..	273	714	258	895	2140

TABLE I.—continued.  
STATEMENT OF NUMBER OF PATIENTS.—continued.

	Males.		Females.		Totals.
	Under 5 years.	Over 5 years.	Under 5 years.	Over 5 years.	
4.—DIED FROM :					
Scarlet Fever.....	....	....	....	....	....
Mixed Infections.....	....	....	....	1	1
Measles.....	2	....	1	....	3
Enteric Fever.....	....	....	....	....	....
Diphtheria .....	7	8	6	15	36
Erysipelas.....	....	2	....	4	6
Puerperal Fever.....	....	....	....	1	1
Tuberculosis.....	....	42	....	26	68
Other Diseases.....	6	6	4	5	21
Totals.....	15	58	11	52	136
5.—REMAINING IN HOSPITAL ON DECEMBER 31ST, 1935, AFFECTED WITH :					
Scarlet Fever.....	7	11	7	29	54
Mixed Infections.....	....	....	1	....	1
Measles.....	10	6	7	2	25
Enteric Fever.....	....	....	....	1	1
Diphtheria .....	8	21	9	40	78
Erysipelas.....	1	3	....	....	4
Puerperal Fever.....	....	....	....	2	2
Tuberculosis.....	....	33	....	20	53
Other Diseases.....	4	1	3	....	8
Totals.....	30	75	27	94	226

TABLE II.

MONTHLY STATEMENT OF PATIENTS FOR THE YEAR ENDED DECEMBER 31ST, 1935 ;  
TOGETHER WITH A COMPARISON WITH THE YEAR 1934, AND WITH THE MEAN  
OF THE FIVE (5) AND FIFTY-TWO (52) YEARS ENDED DECEMBER 31ST, 1934.

Month.	Admissions, 1935.	Admissions, 1934.	Mean of Admissions, 5 years, 1930-1934.	Mean of Admissions, 52 years, 1883-1934.	Daily Average No. of Patients in Hospital, 1935.	Daily Average No. of Patients in Hospital, 1934.	Mean of Daily Average No. of Patients in Hospital, 5 years, 1930-1934.	Mean of Daily Average No. of Patients in Hospital, 52 years, 1883-1934.
January.....	244	212	178.6	123.1	312.0	264.7	246.34	151.9
February.....	197	214	173.4	103.2	315.5	284.6	254.15	145.8
March.....	204	229	189.6	110.2	270.8	288.6	255.9	137.7
April.....	213	211	161.4	103.3	266.5	276.1	248.74	131.4
May.....	167	215	175.4	108.2	227.0	259.2	255.94	132.4
June.....	131	173	153.6	105.2	203.9	236.1	222.9	124.4
July.....	160	162	151.2	112.9	206.5	220.0	219.16	131.7
August.....	160	136	140.8	110.3	219.7	198.1	208.74	133.2
September.....	165	220	177.4	134.1	229.7	220.7	218.94	147.6
October.....	190	294	217.8	159.2	241.8	309.4	271.74	169.1
November.....	200	262	212.0	145.9	264.0	331.0	275.54	180.8
December.....	173	213	188.8	129.5	245.0	305.3	276.18	168.8
Totals.....	2204	2541	....	....	....	....	....	....
M'thly Av'ges....	183.6	211.75	175.0	120.4	250.2	266.0	249.19	146.2



TABLE III.

SHOWING THE NUMBER OF ADMISSIONS OF THE PRINCIPAL INFECTIOUS DISEASES FOR THE YEAR ENDED DECEMBER 31ST, 1935 ; ALSO A COMPARISON WITH THE YEAR 1934, AND WITH THE MEAN OF THE FIVE YEARS AND FIFTY-TWO YEARS ENDED DECEMBER 31ST, 1934.

Month.	Scarlet Fever.	Mixed Infections.	Measles.	Enteric Fever.	Typhus Fever.	Diphtheria.	Erysipelas.	Puerperal Fever.	Smallpox.	Tuberculosis.	Other Diseases.	Totals.
January.....	50	....	1	....	....	119	9	1	....	32	32	244
February.....	57	3	....	....	....	65	7	2	....	27	36	197
March.....	55	6	....	1	....	58	10	4	....	21	49	204
April.....	68	4	....	....	....	64	9	5	....	20	43	213
May.....	60	2	1	....	....	43	12	2	....	25	22	167
June.....	41	1	....	....	....	41	6	....	....	21	21	131
July.....	46	1	6	2	....	32	2	3	....	32	36	160
August.....	44	2	2	3	....	57	7	2	....	19	14	160
September.....	51	3	....	....	....	47	5	1	....	23	35	165
October.....	72	1	6	....	....	58	8	1	....	24	20	190
November.....	53	4	30	....	....	52	10	2	....	20	29	200
December.....	49	2	37	....	....	36	7	2	....	17	23	173
Totals.....	646	29	83	6	....	672	92	25	....	281	370	2204
Totals, 1934.....	551	62	217	5	....	1018	65	27	....	275	321	2541
Increase, 1935..	95	....	....	1	....	....	27	....	....	6	49	178
Decrease, 1935	....	33	134	....	....	346	....	2	....	....	....	515
Mean of 5 years 1930-1934.....	579.6	52.6	56.0	10.2	....	775.8	69.2	23.8	....	268.2	284.6	2120
Mean of 52 years— 1883-1934.....	802.9	7.8	9.25	106.1	4.1	21.8	36.3	12.1	11.6	73.2	143.2	1466.63

TABLE IV.

## ANNUAL STATEMENT.

Disease.	No. of Cases Remaining on Dec. 31st, 1934.	No. of Cases Treated.	No. of Cases Admitted.	No. of Cases Discharged.	No. of Deaths.	No. of Cases Remaining on Dec. 31st, 1935.
Scarlet Fever.....	76	646	722	668	....	54
Mixed Infections.	6	29	35	33	1	1
Measles .....	....	83	83	55	3	25
Enteric Fever ....	....	6	6	5	....	1
Diphtheria.....	141	672	813	699	36	78
Erysipelas.....	6	92	98	88	6	4
Puerperal Fever	3	25	28	25	1	2
Tuberculosis.....	54	281	335	214	68	53
Other Diseases....	12	370	382	353	21	8
Totals .....	298	*2204	†2502	2140	136	‡226
Corresponding figures, 1934		2541	2822	2353	171	298
Average, five years .....		2120	2372	1977.8	134.8	259.4

From From From  
 "Out-Districts." "Out-Districts." "Out-Districts."

1935 .....	*468	†419	‡52
1934 .....	418	379	49



TABLE VI.

Sent in as :—		After Observation :—	
Abscess .....	1	Abscess .....	1
Cerebro-spinal Meningitis.....	1	Influenza .....	1
Chicken Pox .....	20	Chicken Pox .....	20
Coryza .....	1	Laryngitis.....	1
Dysentery .....	2	Dysentery.....	1
		Colitis .....	1
Encephalitis Lethargica.....	3	Encephalitis Lethargica.....	1
		Meningismus .....	1
		Acidosis.....	1
Erythema .....	1	Erythema.....	1
Erythema Nodosum.....	1	Erythema Nodosum .....	1
Influenzal Cold.....	3	Influenzal Cold .....	3
Injury to Arm.....	1	Injury to Arm.....	1
Meningitis .....	2	Influenza .....	1
		Cerebro-spinal Fever.....	1
Mumps .....	2	Adenitis .....	1
		Mumps .....	1
Pemphigus Neonatorum.....	2	Pemphigus Neonatorum.....	2
Pneumonia .....	2	Pneumonia .....	2
Post Diphtheritic Paralysis.....	1	Post Diphtheritic Paralysis ..	1
Scald.....	1	Scald .....	1
Septic Finger.....	1	Septic Finger.....	1
Synovitis .....	1	Rheumatism.....	1
Tonsillitis.....	6	Tonsillitis .....	5
		Diphtheria .....	1
Vaccinia.....	1	Vaccinia .....	1
Whooping Cough.....	48	Whooping Cough ..	44
		Bronchopneumonia ..	1
		Whooping Cough and Diph- theria.....	1
		Whooping Cough and Measles	1
		Whooping Cough and Pneu- monia .....	1
With Mother.....	16	With Mother .....	16
	117		117

**Immunisation Against Diphtheria.**

An important development in immunisation against diphtheria in Salford was initiated during 1935 by the appointment in August of a full-time medical officer (Dr. E. Davis) and the necessary complementary staff solely for this work. The intention in making the appointments which were for a period of one year only, was to endeavour to bring about a substantial reduction in the incidence of diphtheria in Salford by immunising within a short space of time a large proportion of infants and children of school age. As the scheme had been in operation for three months only by the end of 1935, I cannot include a statement as to its results in this Report, but my Report for the year 1936 will contain a complete review of the results attained.

Statistics relating to the year's work are set out below, and the result of the three months' activities of the full-time immunising staff is reflected in a considerable increase in the attendances at the various Schools and Clinics, as compared with the previous year. The figures are as follows :—

**PERSONS COMPLETING THE COURSE DURING 1935.**

	No. of Persons.
Public Clinics.....	632
Various Schools.....	1,349
Ladywell Sanatorium :	
Patients .....	89
Staff .....	19
	<hr/> 2,089 <hr/>

**ATTENDANCES AT CLINICS AND SCHOOLS DURING 1935.**

Public Clinics.....	4,931
Various Schools .....	24,742
	<hr/> 29,673 <hr/>

As compared with 1934 there was an increase in the number of persons who completed the course of 997, and the number of attendances at Clinics and Schools rose from 7,337 to 29,673. A large number of persons commenced the course towards the end of 1935, but had not completed it by the end of the year.

I have also to report that during 1935 a scheme was agreed with the Salford Local Medical and Panel Committee whereby medical practitioners in the City who possess the necessary experience of immunisation may be supplied, under certain conditions which include the keeping and furnishing to the Corporation of records, with material for immunising patients who prefer to be treated by their own medical attendants. During the year only a comparatively small number of applications for material was received.



## SECTION IIIA.

## Venereal Diseases Scheme.

## ANNUAL REPORT, 1935.

In submitting this Annual Report of the work carried out in the Municipal Clinic during the year 1935, it has been decided to adopt the same "lay-out" as in the Report for 1934.

## New Cases.

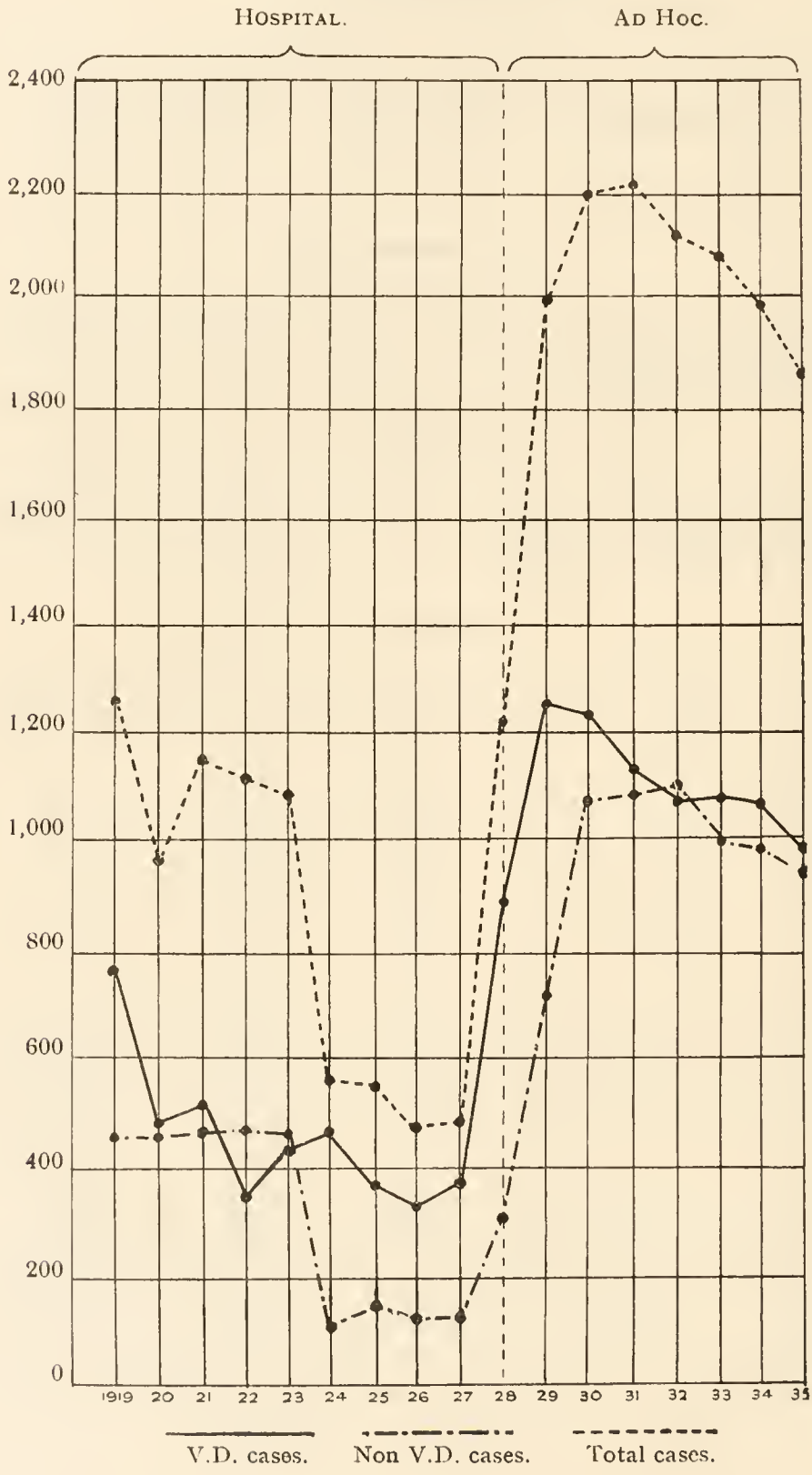
The new cases embrace Items 3 and 4 of the Annual Return to the Ministry of Health—Form V.D. (R) (Revised). Table I. shows these cases classified as Venereal and Non-venereal patients.

TABLE I.

Year.	V.D. Cases.	Non-V.D. Cases.	Total Cases.
1919 .....	782	477	1,259
1920 .....	467	465	932
1921 .....	485	659	1,144
1922 .....	336	717	1,053
1923 .....	422	615	1,037
1924 .....	446	101	547
1925 .....	375	162	537
1926 .....	319	150	469
1927 .....	345	133	478
1928 .....	880	340	1,220
1929 .....	1,261	704	1,965
1930 .....	1,233	1,067	2,300
1931 .....	1,125	1,071	2,196
1932 .....	1,055	1,063	2,118
1933 .....	1,079	999	2,078
1934 .....	1,062	909	1,971
1935 .....	976	904	1,880
Total .....	12,648	10,536	23,184

The figures in Table I. are set out in graphic form in Chart I.

CHART I.



In Table II. the Venereal cases are further analysed under their disease-headings and the percentage rates are also indicated.

TABLE II.

Year.	DISEASE.				PERCENTAGE.			
	Sy.	G.	Ch.	N.V.	Sy.	G.	Ch.	N.V.
1919 .....	440	341	1	477	34.7	27.0	0.07	38.2
1920 .....	239	228	—	465	25.7	24.4	—	49.9
1921 .....	195	286	4	659	17.0	25.0	0.30	57.7
1922 .....	101	235	—	717	9.6	22.3	—	68.1
1923 .....	139	283	—	615	13.4	27.2	—	59.4
1924 .....	164	282	—	101	29.7	51.5	—	18.8
1925 .....	141	234	—	162	26.2	43.5	—	30.3
1926 .....	128	191	—	150	27.2	40.7	—	32.1
1927 .....	132	213	—	133	27.6	44.5	—	27.9
1928 .....	266	599	15	340	21.8	49.0	1.00	28.2
1929 .....	439	743	20	701	23.0	39.0	1.00	37.0
1930 .....	437	776	20	1,067	19.0	33.7	0.80	46.5
1931 .....	424	699	2	1,071	19.3	31.8	0.09	48.8
1932 .....	413	639	3	1,063	19.4	30.1	0.10	50.4
1933 .....	338	722	19	999	21.1	34.7	0.90	52.3
1934 .....	262	721	79	909	13.2	36.5	4.00	46.3
1935 .....	259	678	39	904	13.8	36.0	2.10	48.1
Total .....	4,517	7,870	202	10,533	19.6	34.04	0.86	45.5

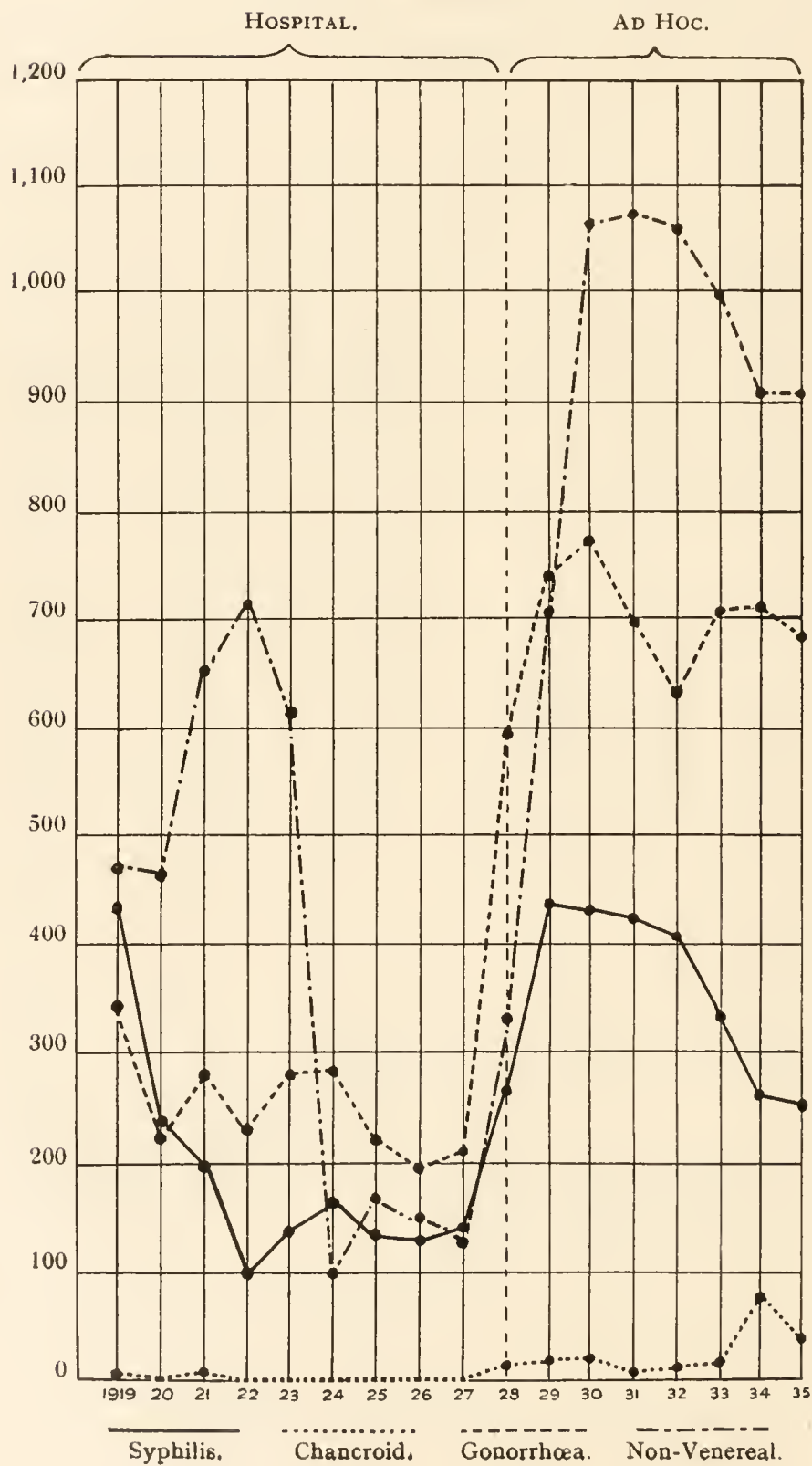
The actual figures are plotted in Chart II.

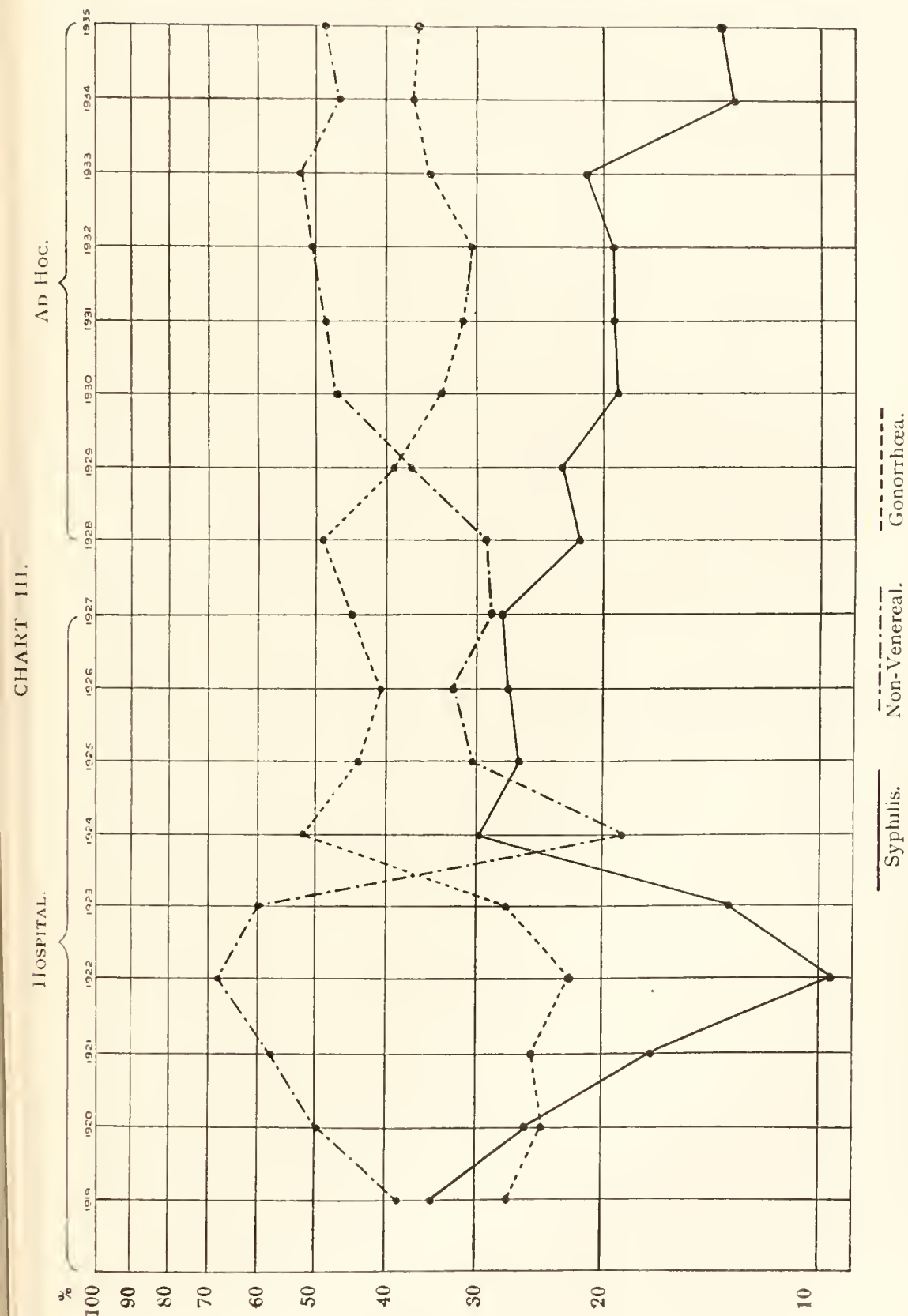
The respective percentage ratios, exclusive of chancroid, given in Table II., are plotted in Chart III. which is on an arithlog grid.

It will be noted that while the curve for gonorrhœa has dropped slightly, those for syphilis and for non-venereal cases have risen. Chart III. being a ratio chart on an arithlog grid gives an accurate picture whereas that shown on Chart II.—being actual figures—does not.

CHART II.

NEW CASES.







## VENEREAL PATIENTS ONLY.

**Sex Incidence.** The annual incidence of new venereal cases classified according to sex is shown in Table III.

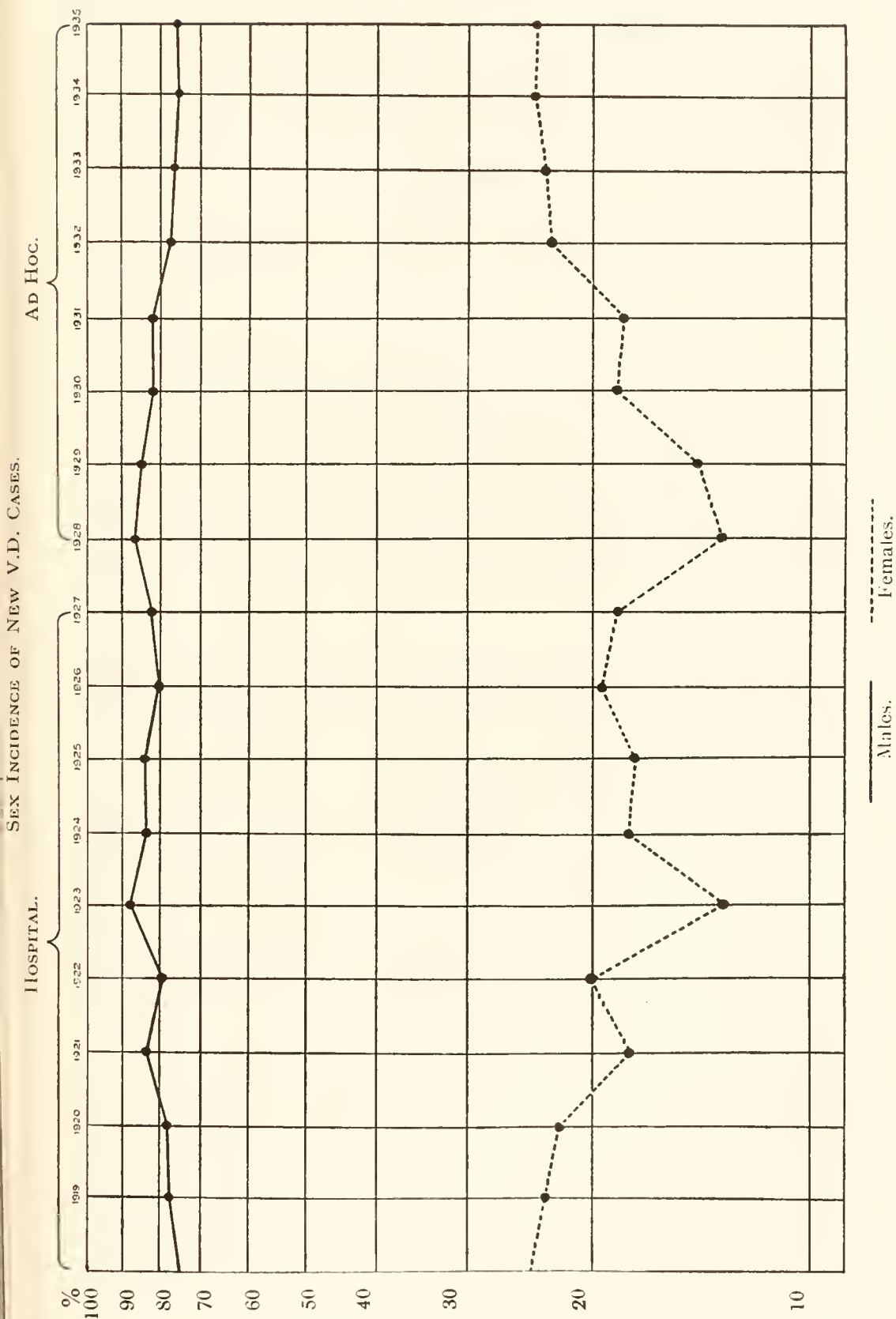
TABLE III.

Year.	Males.	Females.	Percentage	
			Males.	Females.
1919.....	599	183	76.6	23.4
1920.....	361	106	77.5	22.5
1921.....	402	83	82.1	17.9
1922.....	268	68	79.8	20.2
1923.....	366	56	86.8	13.2
1926.....	366	80	82.1	17.9
1925.....	309	66	82.4	17.6
1926.....	256	63	80.3	19.7
1927.....	280	65	81.2	18.8
1928.....	761	119	86.5	13.5
1929.....	1,080	181	85.7	14.3
1930.....	1,002	231	81.3	18.7
1931.....	920	205	81.8	18.2
1932.....	810	245	76.8	23.2
1933.....	822	257	76.2	23.8
1934.....	825	237	75.6	24.4
1935.....	741	235	75.9	24.1
Total.....	9,823	2,478	79.9	20.1

The ratio of males to females on a percentage basis is set out in Chart IV. which, again, is on an arithlog grid.

This Chart shows the very gratifying fact that from 1928—the year in which the Municipal Clinic was opened—there has been a steady rise in the proportion of female venereal patients attending the Treatment Centre.

**Fresh Infections and Old Infections.** A "fresh infection" is defined as one in which the disease is less than twelve months old. An "old infection" is one where the disease has been in existence for more than a year.



The figures shown in Tables IV. and V. are exclusive of cases of prenatal (congenital) syphilis, of those who have returned to the clinic after having been written off as having "ceased to attend" in a previous year, and of those who have received treatment at other Treatment Centres prior to arriving at the Municipal Clinic

**TABLE IV.**  
(Males).

Year.	FRESH INFECTIONS.				OLD INFECTIONS.			
	Sy.	Gon.	Ch.	Total.	Sy.	Gon.	Ch.	Total.
1929.....	32	639	20	691	23	18	—	41
1930.....	192	575	20	787	134	81	—	215
1931.....	148	564	2	714	96	21	—	117
1932.....	201	466	3	670	107	11	—	118
1933.....	97	511	19	627	106	19	—	125
1934.....	86	489	77	652	72	15	—	87
1935.....	94	490	38	622	50	13	—	63
Total ....	850	3,734	179	4,763	588	178	—	766

This represents a very satisfactory state of affairs in that out of 5,529 new male cases of venereal disease, 4,763 or 86 per cent., were infections of less than twelve months' duration.

The corresponding Table for female cases is :—

**TABLE V.**  
(Females).

Year.	FRESH INFECTIONS.				OLD INFECTIONS.			
	Sy.	Gon.	Ch.	Total.	Sy.	Gon.	Ch.	Total.
1929.....	74	86	—	160	21	—	—	21
1930.....	53	99	—	152	58	21	—	79
1931.....	51	74	—	125	52	9	—	61
1932.....	39	103	—	142	61	15	—	76
1933.....	38	144	—	182	40	14	—	54
1934.....	23	145	—	168	33	20	—	53
1935.....	25	136	—	161	33	13	—	46
Total ....	303	787	—	1,090	298	92	—	390

Here again it will be seen that out of 1,480 new female cases of venereal disease, 1,090 or 80 per cent., were infections of no longer duration than one year.

If the two sexes are taken together, it is found that out of all the new cases of venereal disease dealt with from 1929 to 1935 inclusive, 83 per cent. were "fresh infections." This indicates that an extraordinarily high proportion of persons suffering from venereal disease in its early and most curable stage take advantage of the facilities offered by the Municipal Clinic.

### Attendances.

The figures in respect of these are shown in Table VI.

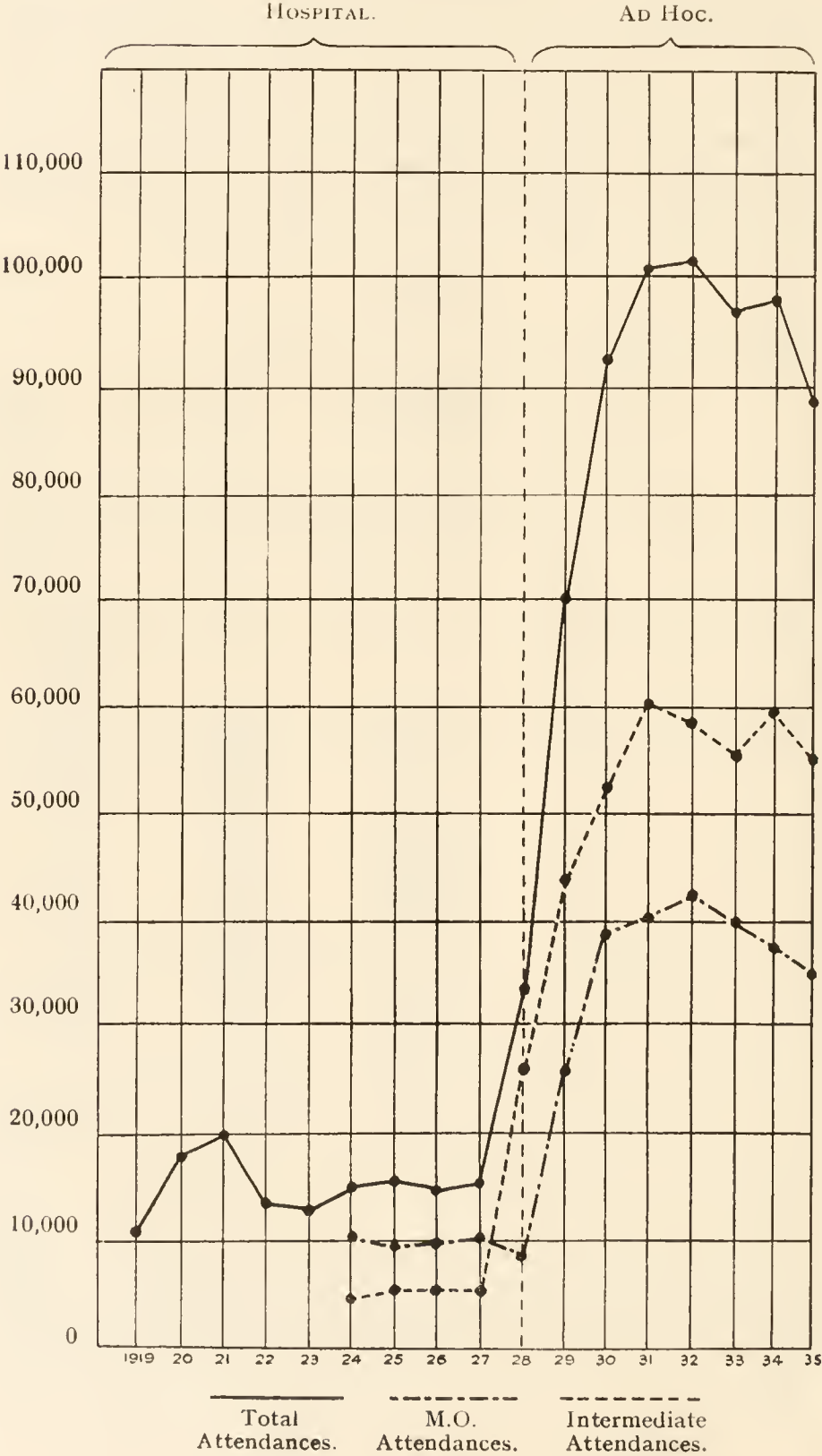
**TABLE VI.**  
**Attendances.**

Year.	Intermediate.	Medical Officer.	Total Attendances.
1919 .....	?	?	11,213
1920 .....	?	?	18,089
1921 .....	?	?	19,967
1922 .....	?	?	13,644
1923 .....	?	?	13,461
1924 .....	5,238	10,062	15,300
1925 .....	5,991	9,723	15,714
1926 .....	5,769	9,406	15,175
1927 .....	5,881	9,688	15,569
1928 .....	26,155	9,348	35,503
1929 .....	44,443	26,163	70,606
1930 .....	53,958	38,996	92,954
1931 .....	60,216	40,706	100,922
1932 .....	58,981	42,485	101,466
1933 .....	55,700	39,028	94,728
1934 .....	59,739	36,767	96,506
1935 .....	55,321	34,656	89,977
Total .....	437,392	307,028	820,974

These figures are plotted in Chart V.

There has been a general drop in attendances, and this is most marked with regard to the female department. This is to be accounted for—in great part—by the fact that there has during the year under review been a considerable alteration in the routine with regard to the treatment of female cases of gonorrhœa. This is set forth on page 20 of the Annual Report for 1933. That

CHART V.  
ATTENDANCES.





routine appears to be very satisfactory, leading to a higher percentage of cases cured in any particular year. It is necessary to bear in mind that the real criterion as to the work of a Clinic is not the number of attendances but the cure-rate.

**Cured Cases and Defaulters.**

It is in respect of these that a Clinic must be judged. Table VII. shows what has been accomplished since 1919.

**TABLE VII.**

**Cured Cases and Defaulters.**

Year.	New Cases.	Cases during year.	Cured.	DEFAULTERS.		
				Dangerous.	Others.	Total.
1919 .....	782	782	143	110	—	110
1920 .....	467	845	82	217	—	217
1921 .....	485	924	183	207	—	207
1922 .....	336	699	55	185	4	189
1923 .....	422	779	24	24	—	24
1924 .....	446	846	28	168	—	168
1925 .....	375	1,030	29	172	—	172
1926 .....	319	1,144	37	74	—	74
1927 .....	345	1,374	37	700	—	700
1928 .....	880	880	66	40	293	333
1929 .....	1,261	1,639	240	275	121	396
1930 .....	1,233	2,052	366	237	222	459
1931 .....	1,125	2,117	331	295	127	422
1932 .....	1,055	2,232	440	290	118	408
1933 .....	1,079	2,318	456	320	131	451
1934 .....	1,062	2,311	293	292	150	442
1935 .....	976	2,243	489	207	173	380
Total .....	12,648	24,215	3,299	3,813	1,339	5,152

The percentage rates of cured cases and dangerous defaulters—i.e., those who did not complete treatment—are plotted on Chart VI. on an arithlog grid. It will be seen that since 1928 the annual percentage of cases cured is definitely greater than that of defaulters except for 1929 and 1934. The fall in the percentage of cured cases in the latter year was due to the standards of cure being made more stringent, and so the figure for that year may, therefore, be taken as abnormal. For 1935, it will be seen that the cure-rate is over 20 per cent., while the defaulter-rate is 12 per cent.

In Table VIII. are set out various items of interest with regard to the work and cost of the Municipal Clinic for the year 1935.

TABLE VIII.

Items.	1935.
Gross cost.....	£8,855
Cost per patient per year.....	£2.6
Cost per attendance.....	1/8.789
Net cost .....	£4,246
Number of patients.....	3,359
Total attendances.....	89,977
Number of attendances per head.....	26
Attendances at Medical Sessions.....	34,656
Attendances at Intermediate Sessions.....	55,321
Number of times patient treated by Medical Officer .....	10.0
Serological tests.....	8,482
Treponema pallidum examinations .....	80
Gonococci examinations.....	6,003
Intravenous injections.. ..	8,436
Cure-rate.....	21.8
Defaulter-rate.....	12.3

## Syphilis.

The new cases of syphilis seen during the year 1935 are analysed as follows :—

TABLE IX.

Stage.	Degree.	Male.	Female.	Total.
ACUTE	I. Sero-neg. primary.....	30	1	31
	II. Sero-pos. primary.....	29	3	32
	III. Early secondary .....	17	6	23
	IV. Late secondary.....	14	9	23
	Total Acute Stage.....	90	19	109
CHRONIC	V. Endosyphilis .....	42	26	68
	VI. Tertiary and Visceral.....	12	8	20
	VII. Neurosyphilis.....	14	6	20
	VIII. Congenital syphilis.....	15	27	42
	Total Chronic Stage.....	83	67	150
GRAND TOTAL.....		173	86	259

Of the new syphilis cases in 1935, approximately 42 per cent. appeared in the acute—the more infectious, but more easily curable—stage.

On account of the great demand which has been made by workers both in this country and abroad for the classification of syphilis and the schemes of treatment described in the Annual Report for 1934, it has been thought advisable to reprint these here.

### **Classification of Syphilis.**

The old Ricordian terms, " Primary," " Secondary," " Tertiary " and so on, were based upon the time-factor and upon clinical appearances. They belong to the pre-treponeme, pre-serological and pre-histopathological era. They are now obsolete, and are even beginning to lose their convenience. Upon the modern pathological concept, syphilis is divided into much finer " Degrees " as will be seen from the following Schema :—

## SCHEMA I.

	Sex.	Life-Epoch.	Stage.	Degree.	Old Terminology.
SYPHILIS.	MALE.	PRE-PUBERTAL	Acute	I. II. III. IV. }	Primary. Secondary
			Chronic	V. VI. VII. VIII.	Latent. Tertiary. Neurosyphilis Congenital.
		VIRILE	Acute	I. II. III. IV.	Do.
			Chronic	V. VI. VII. VIII.	Do.
		SENESCENT	Acute	I. II. III. IV.	Do.
			Chronic	V. VI. VII. VIII.	Do.
	FEMALE.	PRE-MENSTRUAL	Acute	I. II. III. IV.	Do.
			Chronic	V. VI. VII. VIII.	Do.
		REPRODUCTIVE	Acute	I. II. III. IV.	Do.
			Chronic	V. VI. VII. VIII.	Do.
		POST-MENOPAUSAL	Acute	I. II. III. IV.	Do.
			Chronic	V. VI. VII. VIII.	Do.

Syphilis is, unquestionably a different disease in each of its two hosts—the human male and the humale female. There is a wide divergence between the male and female type of reaction. As will be seen from Schema I., the first division of the disease is a sexual one. The next sub-division is in respect of the life-epoch occupied by the patient. These epochs have reference, not so much to the actual number of years lived, but rather to metabolic processes. Such processes are intimately connected with the reproductive function and the endocrine mechanisms associated therewith. These have a very close bearing upon lipid metabolism.

Biologically, the human female is the natural host of the *treponema pallidum*. With her, the parasite lives in the greater symbiotic amity—a benevolent neutrality which is most marked during the reproductive period, but which tends to break down into a state of war after the menopause has been reached.

The pre-pubertal epoch in the male corresponds to the pre-menstrual one in the female. They extend from birth until the reproductive functions have become established. They may be said to occupy the first two decades of life. In both sexes the chief metabolic characteristic of this time is active and continuous bodily growth. Anabolic processes are in the ascendent. Towards the end of the pre-pubertal and pre-menstrual eras, the secondary sexual characters—hitherto occult—begin to manifest themselves, indicating the coming into play of various hormones associated with the endocrine system.

The virile epoch in the male—corresponding to the reproductive in the female—extends from about the twentieth to the fiftieth year. This is the zenith of maleness and femaleness. In both sexes it is a period of metabolic equilibrium; but in the male, the two opposite processes of anabolism and katabolism are more intense than they are in the opposite sex. The male basal metabolic rate is the higher.

In the senescent and post-menopausal epochs, katabolic processes become more and more in evidence. Metabolic equilibrium is lost, and the scale is tipped further and further in the direction of physiological death.

Not only is the male *climate* different from that of the female, but the *soils* in each life-epoch are also quite dissimilar. It is, therefore, inevitable that there will be distinct differences in the germination and development of the syphilitic seed sown, according to the soil upon which it falls and the climate by which it is environed. The sex of the patient and the life-epoch which he or she occupies, exert a powerful bearing upon the character and progress of any malady, and so upon prognosis and treatment.

A careful study of male and female cases during the past two decades has brought into prominence several important practical points. The first is that while syphilis does not do a woman nearly so much harm as it does a man during the reproductive and virile epochs respectively, female syphilis is, at this period much more difficult to cure. Such a woman may have no clinical signs; she may be serologically negative; but she may transfer the infection to her offspring. It is because of this that one insists so strongly that if a woman has ever suffered from syphilis, no matter how efficiently she may have been treated, she must, through every subsequent pregnancy receive intensive therapy if a healthy child is desired.



Another point among many more is that after the menopause is reached, a woman who has received treatment sufficient to cure a man in the previous life-epoch, very frequently develops a positive serology and clinical evidence of visceral or central nervous system syphilis.

By *Acute* syphilis is meant that stage of the disease extending from the first appearance of the primary chancre to the disappearance of the general cutaneous eruption. The essential feature of the pathological picture here is that although the disease is already generalised throughout the body, the main brunt of the attack is being borne by the lipid-rich superficial structures such as the skin and mucous membranes.

By *Chronic* syphilis is meant that stage of the disease from the disappearance of the general cutaneous eruption onwards. The parasites have been repelled from the superficial structures and have found a more congenial habitat in the viscera. There is a change in the histological picture which is now progressing towards fibrosis. This means that even with the total annihilation of every parasite, certain changes of a fibrotic character have taken place in important viscera and there is thus caused permanent anatomical and functional damage.

To indicate these two stages of syphilis, there were formerly used the terms "Early" and "Late." These have been replaced by "Acute" and "Chronic" because the two conditions have not a *time* significance but a pathological one. Chronic syphilis may occur or be created within a few weeks of the appearance of the initial chancre.

Each stage of the disease is now divided into four "Degrees" of increasing gravity and intensity. With regard to these, the Schema is self-explanatory

### Treatment.

For each degree of the disease, certain standard Schedules have been evolved. For *Acute* syphilis, each Schedule is the amount of therapy designed to enable the patient to fulfil the criteria of cure laid down. When Schedules I., II., III. or IV. are carried out in such a manner that their Efficiency Indices come to 60 or over, it can be guaranteed that the patients will successfully pass the cure-standards. No case has yet been recorded of failure to do so; and there has not yet been encountered any Wassermann-fastness or clinical or serological relapse where the Efficiency Index has reached the figure quoted.

In the interests of clearness, Schedules I., II., III. and IV. are set out below on the space-for-time principle. The remedial agents in routine use for acute syphilis are **Stabilarsan** and a **Lipo-soluble Bismuth** preparation, *e.g.*, **Stabismol** or **Bivatol**.

Stabilarsan consists of one molecule of arsphenamine-base—dioxy-diamino-arsenobenzol—linked up with two molecules of glucose. It is, therefore, **Arsphenamine diglucoside**; and it is issued in ampoules in solution ready for use. It is given by the intravenous route thrice weekly—say, Monday, Wednesday and Friday—in doses of 0.45, 0.30 and 0.25 gram, making a total of 1.0 gram in each 7-day period.



ACUTE SYPHILIS.

1st Degree: Schedule I.

2nd Degree: Schedule II.

Week.	THERAPY.		T.U.	Week.	THERAPY.		T.U.
	Arsph. (gm.).	Bi. (gm.).			Arsph. (gm.).	Bi. (gm.).	
1.....	1.0	—	1.0	1.....	1.0	—	1.0
2.....	1.0	—	1.0	2.....	1.0	—	1.0
3.....	1.0	—	1.0	3.....	1.0	—	1.0
4.....	1.0	—	1.0	4.....	1.0	—	1.0
5.....	1.0	—	1.0	5.....	1.0	—	1.0
6.....	1.0	—	1.0	6.....	1.0	—	1.0
7.....	1.0	—	1.0	7.....	1.0	—	1.0
8.....	1.0	—	1.0	8.....	1.0	—	1.0
9.....	1.0	—	1.0	9.....	1.0	—	1.0
10.....	1.0	—	1.0	10.....	1.0	—	1.0
11.....	1.0	—	1.0	11.....	1.0	—	1.0
12.....	1.0	—	1.0	12.....	1.0	—	1.0
13.....	1.0	—	1.0	13.....	1.0	—	1.0
14.....	—	0.2	0.8	14.....	—	0.2	0.8
15.....	—	0.2	0.8	15.....	—	0.2	0.8
16.....	—	0.2	0.8	16.....	—	0.2	0.8
17.....	—	0.2	0.8	17.....	—	0.2	0.8
18.....	1.0	—	1.0	18.....	1.0	—	1.0
19.....	1.0	—	1.0	19.....	1.0	—	1.0
20.....	1.0	—	1.0	20.....	1.0	—	1.0
21.....	1.0	—	1.0	21.....	1.0	—	1.0
22.....	1.0	—	1.0	22.....	1.0	—	1.0
23.....	—	0.2	0.8	23.....	—	0.2	0.8
24.....	—	0.2	0.8	24.....	—	0.2	0.8
25.....	—	0.2	0.8	25.....	—	0.2	0.8
26.....	—	0.2	0.8	26.....	—	0.2	0.8
				27.....	—	0.2	0.8
				28.....	—	0.2	0.8
				29.....	—	0.2	0.8
				30.....	1.0	—	1.0
				31.....	1.0	—	1.0
				32.....	1.0	—	1.0
				33.....	1.0	—	1.0
				34.....	1.0	—	1.0
Total....	18.0	1.6	24.4	Total....	26.0	1.6	32.4

$$\text{E.I.} = \frac{24.4 \times 100}{26} = 93.8.$$

$$\text{E.I.} = \frac{32.4 \times 100}{34} = 95.2.$$

## 3rd Degree: Schedule III.

## 4th Degree: Schedule IV.

Week.	THERAPY.		T.U.	Week.	THERAPY.		T.U.
	Arsph. (gm.).	Bi. (gm.).			Arsph. (gm.).	Bi. (gm.).	
1.....	1.0	—	1.0	1.....	1.0	—	1.0
2.....	1.0	—	1.0	2.....	1.0	—	1.0
3.....	1.0	—	1.0	3.....	1.0	—	1.0
4.....	1.0	—	1.0	4.....	1.0	—	1.0
5.....	1.0	—	1.0	5.....	1.0	—	1.0
6.....	1.0	—	1.0	6.....	1.0	—	1.0
7.....	1.0	—	1.0	7.....	1.0	—	1.0
8.....	1.0	—	1.0	8.....	1.0	—	1.0
9.....	1.0	—	1.0	9.....	1.0	—	1.0
10.....	1.0	—	1.0	10.....	1.0	—	1.0
11.....	1.0	—	1.0	11.....	1.0	—	1.0
12.....	1.0	—	1.0	12.....	1.0	—	1.0
13.....	1.0	—	1.0	13.....	1.0	—	1.0
14.....	—	0.2	0.8	14.....	—	0.2	0.8
15.....	—	0.2	0.8	15.....	—	0.2	0.8
16.....	—	0.2	0.8	16.....	—	0.2	0.8
17.....	—	0.2	0.8	17.....	—	0.2	0.8
18.....	1.0	—	1.0	18.....	1.0	—	1.0
19.....	1.0	—	1.0	19.....	1.0	—	1.0
20.....	1.0	—	1.0	20.....	1.0	—	1.0
21.....	1.0	—	1.0	21.....	1.0	—	1.0
22.....	1.0	—	1.0	22.....	1.0	—	1.0
23.....	1.0	—	1.0	23.....	1.0	—	1.0
24.....	1.0	—	1.0	24.....	1.0	—	1.0
25.....	1.0	—	1.0	25.....	1.0	—	1.0
26.....	—	0.2	0.8	26.....	1.0	—	1.0
27.....	—	0.2	0.8	27.....	1.0	—	1.0
28.....	—	0.2	0.8	28.....	—	0.2	0.8
29.....	—	0.2	0.8	29.....	—	0.2	0.8
30.....	1.0	—	1.0	30.....	—	0.2	0.8
31.....	1.0	—	1.0	31.....	—	0.2	0.8
32.....	1.0	—	1.0	32.....	—	0.2	0.8
33.....	1.0	—	1.0	33.....	1.0	—	1.0
34.....	1.0	—	1.0	34.....	1.0	—	1.0
35.....	1.0	—	1.0	35.....	1.0	—	1.0
36.....	—	0.2	0.8	36.....	1.0	—	1.0
37.....	—	0.2	0.8	37.....	1.0	—	1.0
38.....	—	0.2	0.8	38.....	1.0	—	1.0
39.....	—	0.2	0.8	39.....	1.0	—	1.0
40.....	—	0.2	0.8	40.....	1.0	—	1.0
				41.....	1.0	—	1.0
				42.....	1.0	—	1.0
				43.....	—	0.2	0.8
				44.....	—	0.2	0.8
				45.....	—	0.2	0.8
				46.....	—	0.2	0.8
				47.....	—	0.2	0.8
				48.....	—	0.2	0.8
Total....	27.0	2.6	37.4	Total....	33.0	3.0	45.0

$$\text{E.I.} = \frac{37.4 \times 100}{40} = 93.5.$$

$$\text{E.I.} = \frac{45.0 \times 100}{48} = 93.7.$$

### Evaluation of Therapy.

It is accepted that arsphenamine is more potent than bismuth, and bismuth more so than mercury. That is a statement which is based upon the results of prolonged clinical and serological observation all over the world. But such a statement is a mere generalisation; and on that account it is of very little practical value. Some ten or more years ago there was general agreement with the view that if the value of arsphenamine was taken as the arbitrary figure of 10, then bismuth and mercury might be roughly assessed as 8 and 2 respectively. Again, this was too vague to be of real use

An effort was then made to graduate the values of the remedial agents more accurately; and it was found that their usefulness in human therapy ran parallel with their chemotherapeutic indices as worked out upon the experimental rabbit.

The chemotherapeutic indices of the arsphenamines were found to be in the region of 16. The various bismuth preparations differed in their indices according to their chemical and physical natures—but not according to the metallic content—from 12.8 to 8.0. Pentavalent organic arsenicals such as tryparsamide had an index of 5.1; while the mercurials possessed an index of unity. These indices were tabulated, and an Efficiency Scale was constructed in which the arbitrary figure of 100 was allotted to the agent with the highest chemotherapeutic index—the others being represented as percentages.

For the purpose of evaluating therapy it was clearly necessary that the time-element be taken into account; and the standard time-period of 7 days was taken as it was the general custom to describe treatment as consisting of so much of the agent per week.

The optimum weekly dose for each agent—which is the same thing as the *maximum* for this purpose—was decided upon as the result of clinical and serological observation. To these doses there were given Therapeutic Unit values in accordance with the figures on the Efficiency Scale. This is shown in Table X.

TABLE X.

Agents.	Chemo- therapeutic Indices. C.T.I.	Efficiency Scale.	Therapeutic Unit Value. T.U.
<b>ARSPHENAMINE:</b>			
(Stabilarsan; "914"; Sulpharsphenamine; silver compounds; etc.) .....	16	100	1.00
<b>BISMUTH:</b>			
1. LIPOSOLUBLE:			
(Stabismol; Bivatol; Bismocymol; etc.....)	12.8	80	0.80
2. OIL SUSPENSIONS:			
(Bismuth salicylate).....	9.0	56	0.56
3. WATER SUSPENSIONS:			
(Bismuth oxychloride)....	8.5	53	0.53
4. WATER SOLUBLES:			
(Sodium bismuth thio-glycollate) .....	8.0	50	0.50
5. SUSPENSIONS OF METAL:			
(Hypoloid Bismuth; Bismostab).....	8.0	50	0.50
<b>PENTAVALENT ARSENICALS:</b>			
(Tryparsamide; Stovarsol).....	5.1	32	0.32
<b>MAPHARSEN</b> .....	8.5	53	0.53
<b>MERCURIALS</b> .....	1.0	6	0.06

The next step was to construct a scale of Therapeutic Unit values for each individual dose less than the optimum—that is, for each injection of whatever actual quantity. This is found in Table XI. with respect to the agents dealt with in Table X.

TABLE XI.

Agents.	C.c.	Grams.	T.U.
ARSPHENAMINE :	—	0.15	0.15
(Optimum weekly dose is 0.6	—	0.25	0.25
gram when given once	—	0.30	0.30
weekly ; 0.9 gram when	—	0.45	0.45
given twice weekly ; and	—	0.60	0.60
1.0 gram when given thrice	—	0.75	0.75
weekly).	—	0.90	0.90
	—	1.00	1.00
STABISMOL :	0.5	0.05	0.20
(Optimum weekly dose is 2.0	1.0	0.10	0.40
c.c. or 0.20 gram of Bi.	1.5	0.15	0.60
metal).	2.0	0.20	0.80
BIVATOL :	1.0	0.035	0.20
(Optimum weekly dose is 4.0	2.0	0.07	0.40
c.c. or 0.14 gram of Bi.	3.0	0.105	0.60
metal).	4.0	0.14	0.80
BISMUTH SALICYLATE :	0.5	0.065	0.28
(Optimum weekly dose is 1.0 c.c.	1.0	0.13	0.56
or 0.12 gram of Bi. metal).			
BISMUTH OXYCHLORIDE :			
(Optimum weekly dose is 2.0	1.0	0.20	0.26
c.c. or 0.4 gram of Bi.	2.0	0.40	0.53
metal).			
THIOBISMOL :	Each dose		
(Sod. Bi. Thioglycollate) Opti-	is dissolved	0.075	0.25
mum weekly dose is 0.152	in 1 c.c.	0.152	0.50
gram Bi. metal.	water.		
HYPOLOID BISMUTH :	0.5	0.10	0.12
(Optimum weekly dose is 2.0 c.c.	1.0	0.20	0.25
or 0.4 gram of Bi. metal).	1.5	0.30	0.37
	2.0	0.40	0.50
TRYPARSAMIDE :	—	1.00	0.08
(Optimum weekly dose is 4.0	—	2.00	0.16
grams).	—	3.00	0.24
	—	4.00	0.32
STOVAR SOL :		Grains per	
(Optimum daily dose is 4.0	—	week.	
grains when given daily for	—	7.0	0.08
7 days—i.e., 28 grains per	—	14.0	0.16
week).	—	21.0	0.24
	—	28.0	0.32
COLLOSOL MERCURY SUL-	1.0	—	0.01
PHIDE : (Optimum weekly	3.0	—	0.03
dose is 6.0 c.c.).	6.0	—	0.06
MAPHARSEN :			
(Provisional) (Optimum weekly	—	0.04	0.26
dose is 0.06 gram).	—	0.06	0.53

It will be seen that in each case the T.U. value allotted to the optimum weekly dose of each agent is the same as that in Table X., and that the values of the lower doses are in proportion.

The treatment sheets which are used in the Municipal Clinic for cases of syphilis, are ruled horizontally on the space-for-time principle. Each line represents one day. Every seventh line is more heavily ruled, and so the space between two thick horizontal lines represents one week. The vertical ruling is into columns, representing from left to right : Week, Date, Arsphenamine, Bismuth, Mercury, Pentavalent Arsenic, Iodine, and the last column is for Therapeutic Units. The following Schema shows the method :—

SCHEMA II.  
Treatment.

Week.	Date.	As. 3	Bi.	Hg.	As. 5	I.	T.U.	Remarks.
	1/1/34	0.45					0.45	Stabilarsan.
	3/1/34	0.30					0.30	
1								
	5/1/34	0.25					0.25	
	8/1/34	0.45					0.45	
2	11/1/34	0.45					0.45	
	16/1/34		0.10				0.40	Stabismol.
3	18/1/34		0.10				0.40	
	23/1/34		0.20				0.80	

When the bottom of a page is reached, the columns are added up and the totals are carried forward to the next page. When the number of weeks constituting the Schedule has been reached, then the Efficiency Index is worked out. This is arrived at by means of the formula :—

$$\text{E.I.} = \frac{\text{T.U.} \times 100}{W}$$

where T.U. is the number of Therapeutic Units given, and W is the number of weeks in the Schedule or the actual number of weeks occupied, *whichever*



*is the greater.* For example, if a patient on Schedule I. attends for only 19 weeks, the denominator of the E.I. fraction is not 19 but is 26. If he takes, say, 30 weeks to complete the Schedule, then the denominator is not 26 but 30.

It has been shown by a careful analysis of some 800 cases from 1928 to 1935 that every male patient suffering from acute syphilis who, on Schedules I., II., III. or IV. obtains an E.I. of not less than 60, will pass the tests of cure laid down. The E.I. of 60 or over thus becomes an easily applied and measurable criterion of adequacy. It is true, of course, that *some* patients with an index of less than 60 will fulfil the cure-standards, but some of them will not. The important practical point is that *all* who reach that index-figure or pass it, will suffer no clinical or serological relapse in the future.

When Schedules I., II., III. and IV. are carried through according to plan, the indices work out at over 90, thus providing a very ample margin of safety and allowing for a reasonable amount of irregular attendance.

If a patient on any of these Schedules defaults for three or more successive weeks during the first thirteen, he is, upon his return, regarded as a case of *chronic* syphilis; and, no matter how soon he may have reappeared, he is put upon Schedule V. This is because it has been found that in cases of acute syphilis, any interruption of treatment during the first thirteen weeks is specially prone to cause relapse, precocious tertiarism or subsequent refractariness. In like manner if at the end of the duration of any of the Schedules for acute syphilis, the E.I. is less than 60 and cannot be raised to that figure by four weeks of concurrent therapy, such a patient is regarded as having been inadequately treated and he also is put on Schedule V.

For *chronic* syphilis, a standardisation such as is possible and desirable in acute syphilis, is impracticable. In this stage each case must be treated in a much more individualised fashion; and it has been found that here the E.I. is no guide as to adequacy except in so far as a figure below 60 is definite evidence of insufficient treatment. With an index of 60 or over, the patient suffering from the chronic stage of syphilis cannot be guaranteed against relapse.

The Efficiency Index and this method of evaluating therapy has proved, during the past eight years, to be an extremely valuable—nay, an indispensable—measuring rod in the armamentarium of the syphilologist.

While mercury has no place in the treatment of *acute* syphilis, provided there is no contra-indication to arsphenamine or bismuth, in the *chronic* stage, on the other hand, that agent in the form of Collosal Mercury Sulphide may advantageously be given intravenously, concurrently or alternately, with arsphenamine or bismuth. In acute syphilis the treatment is continuous—no rest intervals being allowed. In the chronic stage, however, rest intervals from



arsphenamine and/or bismuth may profitably be introduced. These periods may be occupied by the administration of Iodine in the form of Collosol Iodine (synonym— " C.I.N.S.") intravenously in doses of from 5 to 20 c.c. per week. This is much superior to potassium iodide given orally.

In chronic syphilis the less potent bismuthic agents such as the salicylate, the oxychloride, thiobismol or the metallic suspensions are to be preferred to the liposolubles.

Considerable attention is being devoted in the Municipal Clinic to the problem of Serological-fastness or Wassermann-fastness. A patient is diagnosed as Wassermann-fast if, after two Schedules V., his blood gives a positive result. It is considered that there are three possible explanations of Wassermann-fastness :

- (1) That the reacting substance is being produced by some focus of parasites ;
- (2) That the presence of the reacting substance is indicative of a metabolic change in tissues which were once, but may no longer be, infected by treponemata ; and
- (3) That both these elements may be present in varying degrees in any particular case.

The last explanation seems to be the most likely one.

The principle which is acted upon in the Municipal Clinic is that a positive Wassermann in chronic syphilis calls for treatment by two Schedules V. If the serology is positive at the end of these, then the patient is Wassermann-fast and the cause for the condition is largely if not wholly metabolic although a parasitic focus cannot be absolutely ruled out.

*Intermittent* treatment should now be begun. There should be thirteen weeks of rest from arsphenamine and bismuth therapy—a period devoted to metabolic alteration. During this metabolic campaign, Collosol Iodine intravenously in doses of from 5 to 20 c.c. weekly should be given for six weeks. This may be succeeded by the intramuscular administration of Aolan for the remaining seven weeks.

During the second thirteen weeks, when a return is made to the parasitic attack, the arsenical should be changed from that which was used before. There may now be given sulpharsphenamine, neo-silversalvarsan or stovarsol. One of the slower acting bismuthic preparations such as bismuth salicylate will be found useful ; and, concurrently with, or instead of, the arsphenamine or the bismuth, collosol mercury sulphide may be exhibited.

In the third thirteen weeks there should be again a concentration upon metabolism. Autohaemotherapy combined with ultra-violet light, fever therapy, hot sulphur baths, and thyroid extract, may all be brought into use.

Treatment during the fourth thirteen weeks is along the lines suggested for the second.

If at the end of this time the patient is over 50 years of age and there are no clinical signs, even though the serology is still positive, treatment may wisely be stopped. In younger men, treatment should be continued until after the fiftieth birthday. In the senescent period of life, the bodily tissues will not react in the same satisfactory manner to anti-syphilitic agents as in the virile epoch.

#### **Gonorrhoea.**

For the male sex, the routine methods which have been in operation for the past four years, continue to give the utmost satisfaction. These are set out in Appendices III. and IV.

In the Female Department, the method outlined on page 20 of my Annual Report for 1933 is proving highly successful.

#### **General.**

The remarks included in my last Annual Report regarding the "**Lorry Girl**" and motor transport drivers, received a good deal of attention in the Press of this country and in that of the United States. As a result of this publicity an enormous number of letters were received from lorry drivers, the Management of various Transport Organisations, Members of Parliament and Social Workers, all expressing satisfaction that attention had now been drawn to the menace of these women. Copies of letters from drivers etc., were sent with a memorandum on the subject to the Medical Members of Parliament, the Ministry of Health, the Ministry of Transport and to a considerable number of Chief Constables. The hope is that it may be possible by legislation or some other means to tackle the problem.

For some years information has gradually been accumulating that there are a great many women who, occupying flats by themselves in various large towns, are to all intents and purposes brothel-inmates. It would appear that in not a few instances, the "white-slaver" or the Syndicate which he represents, may convert a large house into a block of separate self-contained flats. A prostitute is installed in each flat and pays a fairly high rent plus a proportion of her earnings to her "landlord." In this way a completely successful method

has been found of evading the charge of keeping a "disorderly house"—*i.e.*, where two or more women living together, practice prostitution. It is, of course, extremely difficult to get these women to divulge full particulars; but it is suggested that this is a matter which might well repay investigation by the police authorities.

The following Appendices are attached to this Report :

- I. Annual Return for 1935 to the Ministry of Health—Form V.D. (R) (Revised).
- II. Treatment Schemes for Congenital Syphilis.
- III. Treatment of Acute Gonorrhœal Urethritis in the Male.
- IV. Treatment of Posterior Gonorrhœal Urethritis in the Male.
- V. Case Report—Severe Gummatous Ulceration of Face and Auricular Region.

## APPENDIX I.

RETURN RELATING TO ALL PERSONS WHO WERE TREATED AT THE TREATMENT CENTRE AT SALFORD DURING THE YEAR ENDED 31ST DECEMBER, 1935.

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than venereal.		Totals.		Totals.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1. Number of cases on 1st January under treatment or observation	434	191	22	—	352	238	189	23	997	452	1,449
2. Number of cases removed from the register during any previous year which returned during the year under report for treatment or observation of the same infection	14	2	—	—	13	1	—	—	27	3	30
3. Number of cases dealt with for the first time during the year under report (exclusive of cases under Item 4) suffering from—											
Syphilis, primary	59	4	—	—	—	—	—	—	59	4	63
" secondary	27	16	—	—	—	—	—	—	27	16	43
" latent in 1st year of infection	8	5	—	—	—	—	—	—	8	5	13
" all later stages	50	33	—	—	—	—	—	—	50	33	83
" congenital	15	25	—	—	—	—	—	—	15	25	40
Soft Chancre	—	—	38	—	—	—	—	—	38	—	38
Gonorrhœa, 1st year of infection	—	—	—	—	490	136	—	—	490	136	626
Gonorrhœa, later	—	—	—	—	13	13	—	—	13	13	26
Conditions other than venereal	—	—	—	—	—	—	790	114	790	114	904
4. Number of cases dealt with for the first time during the year under report known to have received treatment at other Centres for the same infection	14	3	1	—	26	—	—	—	41	3	44
TOTALS OF ITEMS 1, 2, 3 AND 4.	621	279	61	—	894	388	979	137	2,555	804	3,359
5. Number of cases discharged after completion of treatment and final tests of cure (see Item 15)	102	30	25	—	228	104	828	117	1,183	251	1,434
6. Number of cases which ceased to attend before completion of treatment and were, on first attendance, suffering from :—											
Syphilis, primary	19	2	—	—	—	—	—	—	19	2	21
" secondary	7	4	—	—	—	—	—	—	7	4	11
" latent in 1st year of infection	9	3	—	—	—	—	—	—	9	3	12
" all later stages	16	10	—	—	—	—	—	—	16	10	26
" congenital	6	5	—	—	—	—	—	—	6	5	11
Soft Chancre	—	—	4	—	—	—	—	—	4	—	4
Gonorrhœa, 1st year of infection	—	—	—	—	55	53	—	—	55	53	108
Gonorrhœa, later	—	—	—	—	4	10	—	—	4	10	14
7. Number of cases which ceased to attend after completion of treatment but before final tests of cure (see Item 15)	29	14	—	—	98	32	—	—	127	46	173
8. Number of cases transferred to other Centres or to institutions or to care of private practitioners	93	9	19	—	129	6	—	—	241	15	256
9. Number of cases remaining under treatment or observation on 31st December	340	202	13	—	380	183	151	20	884	405	1,289
TOTALS OF ITEMS 5, 6, 7, 8 AND 9 (These totals should agree with those of Items 1, 2, 3 and 4)	621	279	61	—	894	388	979	137	2,555	804	3,359
10. Number of cases in the following stages of syphilis included in Item 6 which failed to complete one course of treatment :—											
Syphilis, primary	3	1	—	—	—	—	—	—	3	1	4
" secondary	2	2	—	—	—	—	—	—	2	2	4
" latent in 1st year of infection	1	2	—	—	—	—	—	—	1	2	3
" all later stages	2	6	—	—	—	—	—	—	2	6	8
" congenital	—	2	—	—	—	—	—	—	—	2	2
11. Number of attendances :—											
(a) for individual attention of the medical officers	11,693	6,380	225	—	10,302	2,853	2,791	412	25,011	9,645	34,656
(b) for intermediate treatment, e.g., irrigation, dressing	2,107	533	433	—	37,157	12,621	2,430	40	42,127	13,194	55,321
TOTAL ATTENDANCES	13,800	6,913	658	—	47,459	15,474	5,221	452	67,138	22,839	89,977

# VENEREAL DISEASES SCHEME.

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## APPENDIX I.—Continued.

TURN RELATING TO ALL PERSONS WHO WERE TREATED AT THE TREATMENT CENTRE AT SALFORD DURING THE YEAR ENDED THE 31ST DECEMBER, 1935.

	Syphilis.		Soft Chancere.		Gonorrhœa.		Conditions other than venereal.		Totals.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Totals.
In-patients :—											
(a) Total number of persons admitted for treatment during the year.....	—	11	—	—	1	23	—	1	1	35	36
(b) Aggregate number of "in-patient days" of treatment given.....	—	343	—	—	4	818	—	7	4	1,168	1,172

	Under 1 year.		1 and under 5 years.		5 and under 15 years.		15 years and over.		Totals.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Number of cases of congenital syphilis in Item 3 above classified according to age periods. ...	4	2	2	4	5	8	4	11	15	25

	Approved Arsenobenzene Compounds.		Mercury.		Bismuth.	
Chief preparations used in treatment of Syphilis :—						
(a) Names of preparations.....	Stabilarsan, Novostab, Myosalvarsan, Neosilver-salvarsan.		Colloidol Mercury Sulphide.		Stabismol, Chlorostab, Thiobismol	
(b) Total number of injections given (out-patients and in-patients).....	7,432		1,004		5,171	

Are the tests recommended in Memo. V21 as amended by Memo. V21a followed in deciding as to the discharge of the patient after treatment and observation for syphilis and gonorrhœa? .....	YES. N.A.
If not, in what way are they modified? .....	

	Microscopical.		Serum Tests.		
	for spirochetes.	for gonococci.	Wassermann.	Others for Syphilis.	for Gonorrhœa.
Pathological Work :—					
(a) Number of specimens examined at, and by the medical officer of, the Treatment centre...	80	6,003	—	—	—
(b) Number of specimens from patients attending at the Treatment Centre sent for examination to an approved laboratory .....	—	—	3,625	3,696*	1,161

\* { Kahn = 3,625.  
Meinicke = 71.

STATEMENT SHOWING THE SERVICES RENDERED AT THE TREATMENT CENTRE DURING THE YEAR, CLASSIFIED ACCORDING TO THE AREAS IN WHICH THE PATIENTS RESIDED.

County or County Borough (or City in the case of persons residing elsewhere than in England and Wales) to be inserted in these headings.	Salford	Manchester	Lanes.	Cheshire	Bolton	Oldham	Other Areas	British Seamen	Foreign Seamen	Total.
Number of cases in Items 3 and 4 from each area found to be suffering from :—										
Syphilis.....	108	51	47	5	1	3	12	16	16	259
Soft Chancre.....	9	7	8	1	—	—	2	6	6	39
Gonorrhœa.....	233	192	158	15	1	8	25	21	25	678
Conditions other than venereal.....	363	219	193	33	11	3	25	31	26	901
TOTAL .....	713	469	406	54	13	14	64	74	73	1,880

Total number of attendances of all patients residing in each area .....	39,608	22,101	21,059	2,166	869	607	1,871	1,429	267	89,977
Aggregate number of "In-patient days" of all patients residing in each area.....	318	165	689	—	—	—	—	—	—	1,172
Number of doses of approved arsenobenzene compounds given in the out-patient Clinic and in-patient Department to patients residing in each area..	3,554	1,577	1,516	266	86	20	233	153	27	7,432



## APPENDIX II.

## CONGENITAL SYPHILIS.

*Routine Treatment—*

Categories C1 and C2—Birth to 5 years.			
1st Year	Stovarsol orally	for 4 weeks	52 Weeks.
	Lipo-soluble Bi	„ 12 weeks	
	Stovarsol orally	„ 8 weeks	
	Lipo-soluble Bi	„ 12 weeks	
	Arsphenamine	„ 8 weeks	
2nd Year	Lipo-soluble Bi	„ 8 weeks	52 Weeks.
	Rest with tonic treatment	for 13 weeks	
	Arsphenamine	„ 4 weeks	
	Lipo-soluble Bi	„ 4 weeks	
	Arsphenamine	„ 4 weeks	
3rd Year	Lipo-soluble Bi	„ 4 weeks	156 Weeks.
	Rest with tonic treatment	„ 7 weeks	
	Arsphenamine	„ 4 weeks	
	Lipo-soluble Bi	„ 4 weeks	
	Arsphenamine	„ 4 weeks	
4th Year	As for 2nd Year.....	52 weeks	
5th Year	As for 2nd Year.....	52 weeks	
Total.....			260 Weeks.

“Arsphenamine” here means any “914” preparation, Stabilarsan or a Sulpho-compound.

If serology is negative and C.S.F. normal at end of 5th year, discontinue treatment and apply cure-tests. Treatment is not to be discontinued before end of 5th year on account of a negative serology.

## Categories C3—5 to 15 Years, or cases C1 and C2

which are positive at end of Course.

1st Year	Arsphenamine twice weekly	for 10 weeks	52 Weeks.
	Lipo-soluble Bi	„ „ 6 weeks	
	Arsphenamine	„ „ 10 weeks	
	Lipo-soluble Bi	„ „ 6 weeks	
	Arsphenamine	„ „ 10 weeks	
2nd Year	Lipo-soluble Bi	„ „ 4 weeks	52 Weeks.
	Arsphenamine	„ „ 6 weeks	
	Rest for.....	26 weeks	
	Arsphenamine twice weekly	for 10 weeks	
	Lipo-soluble Bi	„ „ 6 weeks	
3rd Year	Arsphenamine	„ „ 10 weeks	52 Weeks.
	Lipo-soluble Bi	„ „ 6 weeks	
	Arsphenamine	„ „ 7 weeks	
	Rest for.....	13 weeks	
	Arsphenamine twice weekly	for 10 weeks	
4th Year	Repeat as 3rd Year.....	52 weeks	104 Weeks.
5th Year	Repeat as 3rd Year.....	52 weeks	
Total.....			260 Weeks.

If serology is negative and C.S.F. normal at end of 5th year, discontinue treatment and apply cure-tests. Treatment is not to be discontinued before end of 5th year on account of a negative serology.

If serology is positive treat as for Wassermann-fastness.

APPENDIX III.

ACUTE ANTERIOR GONOCOCCAL URETHRITIS IN MALE.

Week.	Irrigations.	Installations.	Additional Treatment.	Remarks.
1	A1 (Pot. permang. 1 in 10,000).	Nil.	Nil.	Wassermann and Kahn.
2	A2 (Pot. permang. 1 in 5,000).	Agesulf 0.5%	Nil.	Nil.
3	A3 (Pot. permang. 1 in 3,300).	Agesulf 1.0%	Nil.	Nil.
4	B1 (Hg. Oxycyan. 1 in 10,000).	Nil.	Nil.	Nil.
5	B2 (Hg. Oxycyan. 1 in 5,000).	Nil.	Massage over Sound if urine clear.	Nil.
6	B3 (Hg. Oxycyan. 1 in 3,300).	Nil.	Massage over Sound.	Nil.
7	C1 (Chloramine-T. 1 in 10,000).	Nil.	Massage over Sound.	Nil.
8	C2 (Chloramine-T. 1 in 5,000).	Nil.	Nil.	Nil.
9	NO TREATMENT.	Beer, and morning slides.		
10		Vacc. A. intraderm.	Slides.	
11		Aolan.	Slides.	Wassermann and Kahn.
12		Slides.		
13		Slides.		
14		Urethroscope Sounds.	Slides.	
15		Aolan.	Slides, Prostatic Bead. following Day.	
16		AgNO <sub>3</sub> 1%	Slides.	
17	RETURNS IN 2 MONTHS FOR G.C.F.T.			

## APPENDIX IV.

## POSTERIOR GONOCOCCAL URETHRITIS IN MALE.

Week.	Irrigations.	Installations.	Additional Treatment.	Remarks.
1	A $\frac{1}{2}$ (Pot. permang. 1 in 20,000).	Nil.	Mist. Chloral Co.	Wassermann and Kahn.
2	Do.	Agesulf $\frac{1}{2}\%$	Do.	Nil.
3	Do.	Do.	Do.	Nil.
4	A1 (Pot. permang. 1 in 10,000).	Agesulf 1%	Nil.	Nil.
5	A2 (Pot. permang. 1 in 5,000).	Agesulf 1 $\frac{1}{2}\%$	Nil.	Nil.
6	A3 (Pot. permang. 1 in 3,300).	Do.	Nil.	Nil.
7	B1 (Hg. Oxycyan. 1 in 10,000).	Nil.	Prostatic Massage if Urine Clear.	Nil.
8	B2 (Hg. Oxycyan. 1 in 5,000).	Nil.	Do.	Nil.
9	B3 (Hg. Oxycyan. 1 in 3,300).	Nil.	Do.	Nil.
10	C1 (Chloramine-T. 1 in 10,000).	Nil.	Do.	Nil.
11	C2 (Chloramine-T. 1 in 5,000).	Nil.	Massage over Sound.	Wassermann and Kahn.
12	Do.	Nil.	Do.	Nil.

TEST FOR CURE AS IN ANTERIOR URETHRITIS.

APPENDIX V.

*Reprinted from the "British Journal of Venereal Diseases," Vol. XII., No. 1,  
January, 1936.*

*By kind permission of the Editor.*

CASE REPORT SEVERE GUMMATOUS ULCERATION OF FACE AND  
AND AURICULAR REGION.

By E. T. BURKE.

In these days of modern diagnosis and free treatment, gummatous ulceration of a severe type is relatively rarely encountered in persons under the age forty-five years. It is seen, as a rule, in elderly people whose primary infection dates back for many years.

The patient concerned here is a married woman, thirty-four years of age and under 8 stone in weight. She first attended at Salford Municipal Clinic on November 18th, 1935. The history she gave was as follows:—

In September, 1933, her husband suffered from a penile sore about which he refused to consult his doctor, but which he himself treated by means of some antiseptic ointment. Within a few weeks the lesion healed; but it was succeeded by a non-itchy generalised cutaneous eruption accompanied by sore throat. This, again, received no medical attention, and, in consequence, the diagnosis of syphilis was not then made.

At the end of December, 1933, the patient herself suffered from sore throat and a rash. These eventually disappeared under domestic treatment. In April, 1934, a dusky eruption appeared on the left side of the face between the outer canthus of the eye and the ear. She consulted a practitioner, who had a blood-test done, the result of which was "strongly positive." She was made acquainted with the diagnosis, and the necessity for treatment was emphasised. Unfortunately attendance at a clinic was deprecated; and, more unfortunate still, private treatment was not begun owing to the patient's inability to find the not inconsiderable sum requested in advance.

Between April, 1934, and October, 1935, the skin in the area referred to gradually became thickened. On October 18th, 1935, a small sore appeared on the left cheek about 1 inch from the outer canthus of the eye, and another one just behind the left ear. These sores increased in size with great rapidity. The whole of the pinna was destroyed; there was much pain and discharge,

and the patient—still being without the financial requirements for private treatment—became so depressed as to contemplate suicide. She eventually consulted another practitioner, who insisted upon her attending at the Municipal Clinic.

When first seen on November 18th, 1935, the condition was that shown in photograph No. 1. The most anterior lesion was a circular punched-out ulcer, nearly 1 inch in diameter, about  $\frac{1}{4}$  inch from the outer canthus of the eye. The edges were markedly indurated and were raised so that the depth of the lesion was more than  $\frac{1}{4}$  inch. The skin between this lesion and the tragus was infiltrated and of a dusky red colour, and a small area at the lower margin of this had just begun to ulcerate. The pinna had completely disappeared, only the tragus remaining. The large area shown in the photograph (No. 1) around the external auditory meatus presented the typical punched-out appearance. The edges were indurated, raised and of a bluish colour. There was deep excavation and the whole of the area was bathed in foul pus. Some of the upper fibres of the sterno-mastoid muscle were visible and also some of the branches of the great auricular and small occipital nerves. Just behind the meatus the ulceration had gone very deep indeed. There was considerable danger of the anterior lesion spreading forwards and opening up the palpebral fissure, and of the posterior ulceration causing erosion of some of the vessels and of leading to middle-ear or perhaps even to meningeal damage.

Treatment, as shown in the schema on page 35, was instituted, the patient attending daily as an out-patient.

The lesions were completely healed by the forty-second day of treatment when photograph No. 7 was taken. The remaining scar is thin and tissue-papery, soft and freely movable. The present reddish tint will probably fade. The patient is able to dress her hair over the scar so that nothing of it shows.

The arsenical used was stabilarsan (arsphenamine diglucoside), which has been the routine preparation in the clinics over which I have had charge during the past fifteen years. This was given thrice weekly, the total dose in each seven-day period being 1 gm. This, in my experience, is unquestionably the best method of giving any arsphenamine preparation.

Potassium iodide has been given up in the Salford Municipal Clinic for nearly two years. Much better results have been obtained by the intravenous administration of Collosol Iodine New Solution—"C.I.N.S.," 0.8 per cent. This is given in split doses, so that a total amount of from 10 to 20 c.c. is received per week.

For the first three weeks of treatment the lesions were dressed daily with lint soaked in pure Iodargol. This preparation not only has a remarkable power of rapidly cleaning these purulent lesions, but it has at the same time apparently a fibrolytic effect. The resultant scar is very flexible and causes little deformity.



The following points are, I think, of interest :—

- (1) The sex and age of the patient.
- (2) The gummatous condition began about two years after the primary infection, which was October-November, 1933.
- (3) The patient had received no previous treatment.
- (4) The extremely rapid destruction of tissue between October 18th and November 18th, 1935.
- (5) The rapid and satisfactory healing under the regimen indicated in the schema on page 35.
- (6) The high total dosage of arsphenamine which may be safely administered by the thrice-weekly method of injection.

The photographs, which are life size, were taken with a Kodak  $\frac{1}{2}$  plate Clinical Camera on Eastman Portrait Panchromatic films. The lighting used was two 500-watt floodlamps each at 3 feet distance from the patient. The stop used was f/16 and the exposure was half a second.

Week.	Day.	Date.	Stab.	C.I.N.S.	Dressing.	
I.	1	18/11/35	0.45	3 c.c.	Iodargol	Photo No. 1
	2	19/11/35	—	—	„	
	3	20/11/35	0.30	3 c.c.	„	
	4	21/11/35	—	—	„	
	5	22/11/35	0.25	3 c.c.	„	
	6	23/11/35	—	—	„	
	7	24/11/35	—	—	„	
II.	8	25/11/35	0.45	4 c.c.	„	Photo No. 2
	9	26/11/35	—	—	„	
	10	27/11/35	0.30	3 c.c.	„	
	11	28/11/35	—	—	„	
	12	29/11/35	0.25	3 c.c.	„	
	13	30/11/35	—	—	„	
	14	1/12/35	—	—	„	
III.	15	2/12/35	0.45	4 c.c.	„	Photo No. 3
	16	3/12/35	—	—	„	
	17	4/12/35	0.30	3 c.c.	„	
	18	5/12/35	—	—	„	
	19	6/12/35	0.25	3 c.c.	„	
	20	7/12/35	—	—	„	
	21	8/12/35	—	—	„	
IV.	22	9/12/35	0.45	4 c.c.	Ung. Viozin	Photo No. 4
	23	10/12/35	—	—	„	
	24	11/12/35	0.30	3 c.c.	„	
	25	12/12/35	—	—	„	
	26	13/12/35	0.25	3 c.c.	„	
	27	14/12/35	—	—	„	
	28	15/12/35	—	—	„	
V.	29	16/12/35	0.45	4 c.c.	„	Photo No. 5
	30	17/12/35	—	—	„	
	31	18/12/35	0.30	3 c.c.	„	
	32	19/12/35	—	—	„	
	33	20/12/35	0.25	3 c.c.	„	
	34	21/12/35	—	—	„	
	35	22/12/35	—	—	„	
VI.	36	23/12/35	0.45	4 c.c.	„	Photo No. 6
	37	24/12/35	—	—	„	
	38	25/12/35	0.30	3 c.c.	„	
	39	26/12/35	—	—	„	
	40	27/12/35	0.25	3 c.c.	„	
	41	28/12/35	—	—	„	
	42	29/12/35	—	—	„	
Total ...			6.00	59 c.c.		Photo No. 7



No. 1.







No. 2.







No. 3.





No. 4







No. 5









No. 7.





## SECTION IV.

## Report Relating to the Veterinary Inspector's Department.

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### DISEASES OF ANIMALS ACTS, 1894-1935.

Certain diseases of animals are subject to administrative control by the Ministry of Agriculture and Fisheries. Besides the Orders relating to particular diseases, there are a number of Acts and Orders of a preventive nature which entail a considerable amount of work which cannot be adequately expressed in figures.

#### **Anthrax Order, 1928.**

Anthrax usually affects cattle by causing the sudden death of an animal without any previous symptoms having been noticed. There is, therefore, a danger of persons contracting anthrax through handling the carcase of any animal that has died suddenly, and in order to minimise this risk all sudden deaths in cattle are examined by the Veterinary Inspector before the carcasses are moved.

The risk is even more acute in the case of an animal found at the point of death because of the strong temptation on the part of the owner to bleed the carcase in an attempt to save it for food.

Ten cases of sudden death in cattle were investigated for anthrax and the results were negative in each case. They were all carcasses of cattle found dead in cattle wagons on arrival in Salford.

#### **Importation of Dogs and Cats Order, 1928.**

This Order is to prevent the introduction into Great Britain of rabies through the agency of canine or feline animals brought from overseas. Notices were received from the Customs Officers that 56 ships were in dock with dogs aboard.

The ships were visited in order to ascertain that the dogs were being controlled in accordance with the provisions of the Order.

#### **Foot and Mouth Disease Order, 1928.**

The last outbreak of foot and mouth disease in the City was in 1926. There have, however, been outbreaks since then in several centres in the British Isles.

Twice during the year the City was included in an " Infected Area " subject to the provisions of the Foot and Mouth Disease (Infected Areas Restrictions) Order of 1925.

The first occasion was in June when an outbreak of foot and mouth disease occurred on premises at Rochdale. The restrictions were in operation for a period of 10 days. The second occasion was in November, owing to an outbreak of foot and mouth disease on a farm at Adlington, Cheshire, and on this occasion the restrictions were in force for a period of 15 days.

During the times the City was included in the " Infected Areas," the movement of animals was only permitted by licence granted by the Veterinary Inspector.

The cattle, sheep and pigs in the City lairs were frequently inspected during these periods, and as most of the animals were intended for slaughter, arrangements were made for them to be slaughtered as soon as possible, and the lairs to be specially disinfected as soon as they were empty.

#### **Foot and Mouth Disease (Boiling of Animal Foodstuffs) Order, 1932.**

This Order is to prevent the introduction of foot and mouth disease through the medium of swill or animal offal, etc. The Order provides for the boiling of any meat, swill, bones, offals, etc., before they are fed, or brought into contact with any cattle, sheep, pigs or goats.

The animals chiefly concerned are pigs and for the purpose of supervising this Order the piggeries in the City were regularly inspected.

#### **Swine Fever Order, 1908.**

Eight outbreaks of swine fever were notified to the Ministry of Agriculture and Fisheries during the year. All the outbreaks were found in slaughterhouses in the course of routine meat inspection. Some were in pigs on licence from " Infected Premises " and others were from premises where the disease had not been previously reported.

In one case there were some store pigs in lairs adjoining the slaughterhouse. The premises and slaughterhouse were declared " Infected Premises " within the meaning of the Order, and movement restrictions placed on the pigs. The owner decided to have the remaining pigs killed, and after disinfection had been carried out the restrictions were removed.

The total number of carcasses condemned from all outbreaks was 53. They were moved to the Corporation's destructor and destroyed by burning, under the supervision of an Inspector.

**Lancashire Swine Fever Infected Area Order, 1934.**

Owing to the number of outbreaks of swine fever in Lancashire the Minister of Agriculture made the above Order which came into operation on the 1st of January, 1935.

The objects of the Order were to restrict the movement of pigs into, within and out of the County of Lancaster, and to restrict the operations of dealers, and market transactions within the County.

The Order had the desired effect of reducing the number of outbreaks occurring in Lancashire and it was revoked by a further Order of the Minister on the 10th June, 1935.

**Regulation of Movement of Swine Order of 1922.**

This Order divides England into a scheduled and a free area, and restricts the movement of pigs within or out of the scheduled area.

Salford is in the free area and all pigs coming from the scheduled area have to be accompanied by a licence authorising the movement. The fat pigs must go to a slaughter-house for immediate slaughter and the store pigs to premises where they must be detained and isolated for a period of 27 days.

The piggeries and slaughterhouses were visited to ensure that the provisions of the Order were observed.

In connection with the various Orders relating to swine, 374 licences were received authorising the movement of 234 store and 12,942 fat pigs into Salford, and 46 licences were issued authorising the movement of 81 store and 198 fat pigs out of Salford.

**Tuberculosis Order, 1925.**

Under this Order certain forms of tuberculosis in cattle are subject to administrative action. One case was dealt with under the Order.

This was a cow on a farm in the City which was found on routine inspection to be affected with tuberculosis of the udder. It was valued at £14 and was slaughtered at the Corporation's slaughterhouse. The post-mortem examination showed it to be affected with "advanced tuberculosis" within the meaning of the Order. Compensation at the rate of one-fourth of the value was paid to the owner. Three-fourths of the amount paid in compensation is paid by the Ministry.

**ANIMALS (LANDING FROM IRELAND, CHANNEL ISLANDS AND ISLE OF MAN) ORDER, 1933.**

**Importation of Canadian Cattle Order, 1933.**

The above Orders intimately concern Salford, as a large number of Irish cattle and sheep, and occasionally Canadian cattle, are received in lairs in Salford from the port of landing.

One of the conditions governing the movement of these cattle is that on arrival at the lairs they shall remain there for a period of six days, unless during that period their movement to a slaughterhouse is authorised by a licence issued by the Local authority.

During the year 1,128 licences were received authorising the movement of 14,609 cattle and 28,977 sheep into Salford and 980 licences were issued authorising the movement of 12,566 cattle and 26,573 sheep out of Salford.

The following are the cattle lairs in the City :—

Occupier.	Situation.
Boothman and Caplan.....	West Fleet Street.
W. and W. Taylor.....	Ellor Street.
F. Sherlock .....	West High Street.
W. Brown, Ltd.....	West High Street.
T. Knowles and Son .....	West High Street.
W. Ward and Son .....	Hodge Lane.
A. Chapman and Co. ....	Eccles New Road.
W. Bowers .....	Harrison Street.

The cattle lairs are frequently visited in order to check the movement of Imported animals and to see that they remain free from disease during the period of detention ; also to ensure that the lairs are maintained in such a condition that they do not become a nuisance.

**TRANSIT OF ANIMALS ORDER OF 1927.**

**Transit of Animals (Amendment) Order of 1931.**

These Orders contain a number of provisions relating to the carriage of animals by road and rail. Brindleheath station, Pendleton, which had previously been used for receiving horses only, is now used for receiving cattle and sheep. Before it could be used for this purpose certain alterations had to be carried out in order to comply with the provisions of the above Order.

There are now three cattle stations in Salford, viz. :—Brindleheath, Cross Lane and Windsor Bridge. The stations have been regularly visited in order



to ensure that the cattle pens and railway wagons were thoroughly disinfected after use. There were 29,830 cattle trucks cleansed and disinfected during the year.

## RECEIVED INTO THE CITY BY RAIL.

Cattle.	Sheep.	Pigs.	Calves.	Horses.
59,502	234,023	1,424	2,633	20

## FORWARDED OUT OF THE CITY BY RAIL.

Cattle.	Sheep.	Pigs.	Calves.	Horses.
1,092	1,880	—	11	—

In the case of animals moved by road it is necessary that the vehicle used for their conveyance should be cleansed and disinfected as soon as possible after each load has been entirely discharged. It is also necessary that a book, giving a record of the stock carried, and the dates and places at which the vehicle was cleansed and disinfected, shall be available at all times on the vehicle to which it relates.

The road vehicles used for this purpose were frequently inspected and the record books examined.

**THE MILK SUPPLY.****Milk Supply to Institutions.**

The Corporation's milk contracts for milk supplied to local hospitals and special schools are for Grade "A" milk and "Pasteurised" milk, the Grade "A" milk contracts being for periods of twelve months and the "Pasteurised" milk contracts for six months. Approximately 160 gallons of Grade "A" milk are required daily and this is divided into three separate contracts.

When tenders are received the farms are visited by the Veterinary Inspector and a Sub-committee of the Purchasing Committee, and a report on each farm is submitted to the Purchasing Committee in order to assist it in the selection of suitable farms. The farms selected during 1935 were the same as last year, no change having been made since Grade "A" milk was first asked for in 1929. They are regularly visited by the Veterinary Inspector for the purpose of examining the cattle and inspecting the premises; special attention being paid to the detection of diseases likely to affect the milk. On two of the farms milking is done by milking machines.

An additional control is made by frequently sampling the milk on delivery at the hospitals and schools. The samples are examined for bacterial content and the presence of Coliform organisms.

Thirty-three samples were examined and in two instances only did they fail to comply with the standard required for Grade "A" milk. The consistently

low counts are an indication of the care taken in production, especially as the samples are taken at all periods throughout the year, and without previous knowledge of the producers.

With regard to the Grade "A" milk to Ladywell Sanatorium, the Maternity Home and Babies' Hospital and part of Hope Hospital, this milk is actually Grade "A" (Tuberculin Tested) although only Grade "A" is asked for. This milk is, therefore, much safer than Grade "A" milk.

There are approximately 70 cows on this farm and it is licensed for the production of "Certified" milk. The half-yearly tuberculin testing of the cattle is carried out by the Corporation's Veterinary Inspector and any cow failing to pass the test is immediately removed from the herd. Last year 150 tests were made and four cows failed to pass.

During the first part of the year the milk supplied to the special schools was ordinary raw milk but produced on a selected farm. When the contract expired in October the Health Committee decided that the milk for the special schools should be similar to that purchased under the other raw milk contracts, and tenders for Grade "A" milk were asked for. It was not necessary, however, to make any change in the source of supply as the previous supplier had previously taken out a Grade "A" licence, and was, therefore, in a position to tender. The milk has been very satisfactory, nine samples were taken at the schools and they all complied with the required standard.

The greater part of the milk supplied to the hospitals is "Pasteurised." Twenty-four samples were examined and two failed to comply with the required standard.

#### BACTERIOLOGICAL EXAMINATION OF SAMPLES OBTAINED FROM CONTRACT MILK SUPPLY.

	No. of samples examined.	Bacteria per c.c.								Presumptive Coli. Test.			
		0—1,000	1,000—10,000	10,000—30,000	30,000—50,000	50,000—100,000	100,000—150,000	150,000—200,000	Over 200,000	Coli. absent in 1/10.	Present 1/10	Present 1/100	Percentage with Coli. in 1/10.
Pasteurised.. .. .	24	6	13	2	2	—	—	—	1	16	6	2	33.33%
Grade "A" (1) .....	1	1	7	2	2	—	—	—	1	12	1	—	7.69%
Grade "A" (2) .....	11	2	4	4	—	1	—	—	—	10	1	—	9.09%
Grade "A" (3) .....	9	—	—	4	1	2	1	1	—	5	3	1	44.44%

**Milk (Special Designations) Order, 1923.**

The following licences were issued during the year :—

- 11 Dealers' Licences to sell milk as " Certified."
- 3 Supplementary Licences to sell milk as " Certified."
- 7 Dealers' Licences to sell milk as Grade " A."
- 1 Producer's Licence to produce milk as Grade " A."
- 2 Supplementary Licences to sell milk as Grade " A."
- 3 Dealers' Licences to sell milk as Grade " A " (Tuberculin Tested)
- 14 Dealers' Licences to sell milk as " Pasteurised."
- 5 Supplementary Licences to sell milk as " Pasteurised."
- 1 Licence in respect of Pasteurising Establishments.

The number of licence holders shows an increase over last year, but, apart from pasteurised milk, comparatively little graded milk is sold ; some of the licence holders only supply one or two bottles daily.

There has been a reduction in the price of tuberculin tested milk, and it is now obtainable at a cost of very little more than that of ordinary milk. This has not, however, resulted in any appreciable increase in the demand.

More milk is now sold as " Pasteurised," but this has largely been brought about by the Corporation insisting on " Pasteurised " milk being supplied to school children and to necessitous cases under the Corporation's assisted milk scheme.

Excluding the samples of Grade " A " milk taken from milk supplied under contract, 8 samples of " Certified " milk and 14 samples of " Pasteurised " milk were examined for bacterial content. All the " Certified " samples and 13 of the " Pasteurised " samples complied with the standards prescribed by the Order. One sample of " Pasteurised " milk failed to comply with the prescribed standard.

**School Milk.**

Since the Milk Marketing Board's scheme for reducing the price of milk supplied to school children came into operation there has been a considerable increase in the number of children taking milk during school hours. Under the scheme bottles containing one-third of a pint of milk are supplied at a cost of one penny ; one half-penny is paid by the child and one half-penny by the Milk Marketing Board. One of the conditions governing the payments made by the Board is that the source of supply shall be approved by the Medical Officer of Health.

The question was carefully considered and it was decided that only "Pasteurised" milk should be approved; all dairymen were notified to this effect.

Before this decision was arrived at it was a common practice to deliver school milk warm, but when "Pasteurised" milk was made compulsory it was no longer possible to do so as one of the conditions contained in the Milk (Special Designations) Order, 1923 states that "Pasteurised" milk shall not be reheated.

The milk is now delivered cold, and reports received from the schools indicate that this has resulted in a falling off in the number of children taking milk. This is regrettable, but the only way this difficulty could be overcome is by heating the milk after delivery at the schools.

### **Inspection of Dairies.**

With the exception of a very small quantity of milk all the milk sold in the City is brought in from outside districts so that the supervision consists chiefly of sampling and inspection of dairies.

A fairly large amount of this milk is now produced on "Accredited" farms. This has not resulted in any decrease in the amount of milk found to contain tubercle bacilli, but much of the milk is now produced under cleaner and more hygienic conditions.

There are 767 registered retail purveyors of milk; this number includes 606 persons who sell bottled milk only. The opinion still persists that if a person sells bottled milk only he does not require to be registered. This is not so; the only difference in the position of persons selling bottled and loose milk is that in the case of bottled milk the premises are not registered as a dairy.

Since 1928 there has been a marked improvement in the type of premises from which loose milk is sold. Prior to that many shops of the mixed business type sold milk in conjunction with other articles, but since then, with a few exceptions, these premises have now been removed from the register. It is hoped that in the near future all such shops will be removed from the register, and the sale of loose milk confined to shops selling only milk and dairy produce.

The 161 retail purveyors of milk on the register are made up as follows:—registered with some other local authority, but selling some milk in Salford, 30; large milk depôts and small dairies, 81; retail milk shops selling other articles in conjunction with loose milk, 50.

The following table shows the decrease in the number of persons selling loose milk, and the increase in the number selling bottled milk only that has been effected since 1928.

	Number selling loose milk.	Number selling bottled milk only.	Total persons registered.
1928.....	760	—	760
1929.....	471	222	693
1930.....	361	329	690
1931.....	342	374	716
1932.....	262	499	761
1933.....	237	529	766
1934.....	183	592	775
1935. ....	161	606	767

The dairies are regularly visited, special attention being paid to the method of cleaning the utensils, storage of milk, cleanliness of premises and general structure of the buildings.

The dairies have on the whole been conducted in a satisfactory manner, but there have been cases where it has been necessary to make complaints. The complaints related chiefly to the sterilising of bottles and vessels used in connection with the milk, cleanliness of the premises and storage of the milk.

In sterilising milk churns by inverting the churn over a steam jet it is common to find that the steam is only applied for a few seconds. This is not satisfactory as nothing less than three minutes' exposure in this way will effectively sterilise large churns. For this reason the steam jet is not so satisfactory as the automatic can washer that is installed in some of the larger dairies.

In some cases structural alterations to the premises were necessary, such as repairs to floors and walls, and extension of premises. One dairy which three years ago received the milk of three farms daily is now receiving milk from over one hundred farms. This dairy has been entirely re-built, and is now one of the largest in the City.

The distribution of milk in the streets shows some improvement, chiefly by reason of an increase in the amount of bottled milk. The common method of selling loose milk is by dipping into an open vessel. There are many objections to this, particularly during wet or windy weather, but it appears to be the one commonly in use in this part of the country.

#### BACTERIOLOGICAL EXAMINATION OF MILK SAMPLES.

Samples of milk for bacteriological examination were submitted to Dr. Crawford, the City Pathologist and Bacteriologist. One hundred and eighteen samples were examined for bacterial content, and thirty-five empty milk bottles were tested for efficiency of sterilisation.



**CLASSIFICATION OF SAMPLES.**

	" Certified " milk.....	8
	" Pasteurised " milk.....	14
	Farm milk .....	24
	School milk.....	12
Contract milk.	{ Grade " A " milk.....	33
	{ " Pasteurised " milk.....	25
	Special investigation samples.....	2
	Bottles .....	35
		<hr/> 153 <hr/>

When a sample of farm milk was found to have a high bacterial content a report was sent to the Medical Officer of Health of the producing authority. This usually resulted in the local inspector visiting the premises and the receipt of a report from him.

**MILK BOTTLES.**

Clean milk bottles are tested for efficiency of sterilisation by lining the inside of the bottle with lactose litmus gelatine and incubating at room temperature for three days.

The addition of litmus to the culture medium is an improvement as the red colour of the dirty bottles makes a striking contrast with the blue of the clean bottles, and this, together with the visible colonies, is readily understood when demonstrated to the dairymen.

Thirty-six bottles were examined during the year and 11 or 30.55 per cent. were found to be improperly sterilised. In many cases they did not appear to have been sterilised at all. This percentage of dirty bottles is slightly less than last year, but it is still too high and emphasises the necessity of continued supervision in this direction.

No milk purveyor is allowed to fill bottles unless his premises are equipped with a steam sterilising outfit, and there is, therefore, no reason why every bottle should not be thoroughly sterilised. In some instances, the reason was improper application of the steam, either through too low a temperature or too short exposure to the required heat.

In other cases the cause was pure carelessness or neglect owing to the dairymen not making use of the means at their disposal or being in a hurry to finish work for the day.

When an unsatisfactory bottle was found, an inspector visited the premises and remained while the bottles were being washed in order to check the temperature and give advice where it was required. This usually resulted in an immediate improvement, but that in some instances the improvement was only of a temporary nature.

There has been a considerable increase in the amount of milk sold in bottles during the last few years and this question of sterilising returned empty bottles is regarded as being most important.

**Tuberculous Milk.**

Four hundred and seventy-two samples were examined for tuberculosis.

Origin.	Number examined.	Number positive.
" Certified ".....	2	—
Grade " A ".....	1	—
" Pasteurised ".....	9	—
Farm.....	460	48
	<hr/> 472	<hr/> 48
	<hr/>	<hr/>

Each sample of farm milk was a mixed sample of all the milk received from one farm at one delivery. In some cases only part of the milk produced was sent to Salford, the remainder being sent elsewhere or retailed locally, so that in these cases the sample could not be said to represent the milk from all the cows on the farm.

Of the 472 samples examined, 48 or 10.16 per cent. were positive. In considering the farm milk alone 10.42 per cent. of the samples examined were positive. This is a high percentage when compared with the figure of 6.7 per cent. which is given in a recent report by the People's League of Health as the average for the country as a whole.

It is also a slightly higher percentage than has been known in Salford for many years. Fortunately only a small part of this milk reaches the consumer in the raw state, the greater part being pasteurised.

In comparing the percentage of positive samples with that of previous years it should be mentioned that prior to 1933 all milks examined for tuberculosis were tested by examining the inoculated guinea pigs three weeks after inoculation, but since 1933 the guinea pigs have not been examined until six weeks after inoculation. I mention this because it was found that a fairly high percentage of milk samples which were negative at three weeks ultimately proved positive at six weeks.

The counties of Cheshire and Lancashire are the chief sources of supply, and, as has invariably been the case in the past, the milk from Cheshire contained a much higher percentage of tuberculous samples.

Two hundred and sixteen samples were taken from Cheshire farms and thirty or 13.8 per cent. were positive. One hundred and ninety samples were taken from Lancashire farms and fifteen or 7.36 per cent. were positive.

On a sample being found positive, the Medical Officer of Health of the producing authority was notified and the herd inspected under Section 4 of the Milk and Dairies (Consolidation) Act, of 1915.

The herd inspections resulted in one cow being found giving tuberculous milk on thirty-two farms, two cows on two farms and three cows on one farm; a total of thirty-nine cows. They were all slaughtered under the Tuberculosis Order by the respective local authority.

TABLE SHOWING NUMBER OF SAMPLES OF MILK OBTAINED FROM VARIOUS COUNTIES, AND THE NUMBER OF PERCENTAGE FOUND TO BE TUBERCULOUS, FOR THE YEARS 1923-1935.

	Year 1923.			Year 1924.			Year 1925.			Year 1926.			Year 1927.			Year 1928.			Year 1929.			Year 1930.			Year 1931.			Year 1932.			Year 1933.			Year 1934.			Year 1935.			
	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.	Total number of samples examined.	Number positive.	Percentage positive.				
Cheshire .....	123	17	13.8	126	14	11.1	203	22	10.8	157	14	8.9	178	20	11.2	220	23	10.4	240	26	10.8	253	21	8.3	225	20	8.8	195	22	11.2	185	22	11.8	193	23	11.9	216	30	13.8	
Lancashire.....	94	5	5.3	76	6	8.0	90	4	4.4	152	7	4.6	124	6	4.8	135	7	5.1	148	14	9.4	156	7	4.4	151	7	4.6	138	6	4.3	121	12	9.9	176	8	4.5	190	14	7.3	
Yorkshire .....	21	1	4.7	14	...	...	16	1	6.2	17	1	6.0	41	4	9.7	58	4	6.9	48	1	2.0	41	1	2.4	40	2	5.0	31	...	...	42	2	4.7	63	1	1.6	38	3	7.8	
Staffordshire .....	7	...	...	7	1	14.3	2	...	...	1	...	...	8	1	12.5	15	2	13.6	8	2	25.0	7	...	...	5	1	20.0	10	2	20.0	11	2	18.1	15	4	26.6	14	1	7.1	
Derbyshire .....	31	...	...	39	2	5.0	14	2	14.3	...	...	...	9	...	...	15	1	6.3	9	1	11.1	1	...	...	1	...	...	...	...	...	1	...	2	1	50.0	2	...	...		
Shropshire .....	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...		
Westmorland .....	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Cumberland .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	1	14.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Wales .....	1	1	100.	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Scotland .....	1	...	...	2	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Mixed .....	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	12	2	16.6	9	1	11.1	12	1	8.5	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Pasteurised.....	...	...	...	...	...	...	...	...	...	...	...	...	11	...	...	9	...	...	1	0	0	53	...	...	15	...	...	6	...	...	17	...	...	5	...	...	9	...	...	
Special.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	6	...	...	*9	...	...	*10	1	10.0	3	...	...
Total for year.....	278	24	8.63	265	23	8.7	331	29	8.75	329	22	6.68	371	31	8.3	466	39	8.3	463	45	9.71	530	31	5.8	442	30	6.78	386	30	7.7	386	38	9.8	465	38	8.2	472	48	10.1	

\*" Certified," Grade " A " (Tuberculin Tested) and Grade " A " Milks.

On thirteen farms no cow was found giving tuberculous milk at the time of the inspection. The clinical finding was confirmed by an examination of a bulk sample of milk taken from all the cows in the herd. In some cases there was definite evidence of an affected animal having been slaughtered during the period between taking the original sample and examining the herd, in other cases cows had been sold to dealers and butchers, and some of the cows contributing to the original sample had gone "dry."

Nine samples of "Pasteurised" milk were examined but none were found to contain tubercle bacilli.

### Phosphatase Test.

The lack of reliable means of testing milk in order to ascertain whether it had been properly pasteurised or not has been a handicap in the control of pasteurising plants.

Towards the end of the year workers at the National Institute for Research in Dairying, Reading, described a test by which it was claimed that it is possible to determine whether milk had been properly pasteurised or not by testing for the presence of an enzyme called phosphatase. It is claimed that this enzyme, which is normally present in raw milk, is destroyed by pasteurisation.

It was decided to apply the test to commercially "Pasteurised" milk in Salford, and by the end of the year 25 samples had been examined.

The following table shows the results of these examination :—

Date.	Sample No.	Result.
14/8/35.....	1	+
Do. ....	2	+
Do. ....	3	—
14/8/35.....	4	—
Do. ....	5	—
Do. ....	6	—
Do. ....	7	—
29/8/35.....	8	+
Do. ....	9	—
Do. ....	10	—
Do. ....	11	—
Do. ....	12	+ +
Do. ....	13	+ +
Do. ....	14	+ +
5/11/35.....	15	+ +
Do. ....	16	—
Do. ....	17	+
Do. ....	18	+
Do. ....	19	+ +
20/11/35.....	20	—
Do. ....	21	—
Do. ....	22	+ +
Do. ....	23	—
Do. ....	24	+
Do. ....	25	—

Not properly pasteurised.

Do. do.

Properly heated.

Do. do.

Do. do.

Do. do.

Do. do.

Not properly pasteurised

Properly heated.

Do. do.

Do. do.

Grossly underheated (raw?).

Do. do. do.

Do. do. do.

Do. do. do.

Properly heated.

Not properly pasteurised.

Do. do. do.

Grossly underheated (raw?).

Properly heated.

Do. do.

Grossly underheated (raw?).

Properly heated.

Not properly pasteurised.

Properly heated.

It will be seen that of the twenty-five samples examined, 12 or 48 per cent. were found to be unsatisfactory. The samples were all bought as "Pasteurised." It is intended that next year a much larger number of samples will be examined by this method, and if the test is found to be reliable it will be used as a routine measure in the control of pasteurising plants.

### Inspection of Meat.

TABLE OF MONTHLY SEIZURES OF DISEASED AND UNSOUND FOOD DISCOVERED DURING ROUTINE INSPECTION, AND OF UNSOUND FOOD SURRENDERED BY THE OWNERS THEREOF DURING 1935.

Month.	No. of seizures.	Beef lbs.	Mutton lbs.	Pork lbs.	Veal lbs.	Miscel. lbs.	Total.
January.....	158	246	—	6,473	—	—	6,719
February .....	117	650	2	4,456	—	168	5,276
March.....	128	682	4	3,742	—	—	4,428
April.....	122	3,056	84	2,590	—	—	5,730
May.....	64	822	68	1,726	—	28	2,644
June.....	77	1,467	310	6,036	—	132	7,945
July.....	63	871	—	2,510	—	3,248	6,629
August.....	61	657	68	2,931	—	—	3,656
September.....	163	796	5	4,948	—	2,522	8,271
October.....	215	2,662	—	6,832	—	—	9,494
November.....	200	3,559	14	6,548	—	1,120	11,241
December.....	238	164	—	8,162	—	14	8,340
Totals....	1,606	15,632	555	56,954	—	7,232	80,373

TABLE SHOWING THE AMOUNT OF FOOD CONDEMNED FROM VARIOUS CAUSES DURING 1935.

No. of seizures.	Cause of Seizure.	Weight in lbs.
1,207	Tuberculosis .....	50,735
84	Pleurisy and Pericarditis .....	836
75	Cirrhosis .....	584
53	Swine Fever .....	8,084
41	Hydatid disease .....	328
16	Unsound .....	7,232
16	Injury .....	1,064
15	Decomposition .....	414
15	Moribund .....	2,745
14	Jaundice .....	2,660
14	Congestion .....	64
14	Distomatosis .....	128
12	Abscess .....	221
11	Swine Erysipelas .....	2,138
5	Peritonitis .....	764
5	Fatty Degeneration .....	46
4	Emaciation .....	1,084
2	Oedema .....	834
2	Septicæmia.....	362
1	Aromatic odour.....	50
1,606		80,373



Of the total weight of meat seized 22 tons, 12 cwt., 3 qrs., 27 lbs. or 63.12 per cent. was seized on account of tuberculousis.

The miscellaneous articles condemned were :

Desiccated cocoanut .....	3,368 lbs.
Canned foods.....	3,248 lbs.
Dried fruits.....	238 lbs.
Margarine .....	112 lbs.
Canned shrimps .....	56 lbs.
Plums .....	56 lbs.
Oranges .....	28 lbs.
Condensed milk .....	14 lbs.
Sausages .....	12 lbs.

### Slaughterhouses.

There are five licensed private slaughterhouses and one public slaughterhouse in the city. This is two less than last year as the licences previously held in respect of two private slaughterhouses have been allowed to lapse.

Three of the private slaughter-houses are used for killing pigs only. The public slaughter-house is divided into booths, one booth being occupied by a horse slaughterer, one is retained for casual slaughtering and the others are let to butchers.

The slaughterhouses have been visited whenever slaughtering has taken place ; 2,652 visits having been made by the inspectors.

### NUMBER OF CARCASSES INSPECTED.

	Number inspected.
Cattle.....	1,710
Sheep .....	21,688
Pigs.....	19,818
	<hr/> 43,216 <hr/>

### The Slaughter of Animals Act, 1933.

This act came into operation on the 1st January, 1934, and its objects are to ensure that humane methods are used in slaughtering animals and in the treatment of animals about to be slaughtered.

The following is a summary of the chief provisions of the Act :—

(Sec. 1) Every animal slaughtered in a slaughterhouse or knackers' yard shall be instantaneously slaughtered or shall by stunning be rendered insensible to pain until death supervenes, and such slaughtering or stunning shall be effected by means of a mechanically operated instrument.

- (Sec. 2) The provision contained in Sec. 1 does not apply to sheep unless the local authority passes a resolution to include sheep. (A resolution applying Sec. 1 to sheep has been passed by the Salford City Council).
- (Sec. 3) No animal shall be slaughtered or stunned in a slaughterhouse or knackers' yard by any person who is not licensed by the local authority ; such person must be over 18 years of age and be in the opinion of the local authority a fit and proper person to hold such a licence.

The second schedule to the Act makes certain provisions applicable to all slaughterhouses and knackers' yards. A summary of the provisions are :—

- (1a) Avoid bringing an animal over any ground likely to cause it to slip and fall.
- (1b) Prevent infliction of any unnecessary suffering and pain.
- (2) Provide animals awaiting slaughter with a sufficient quantity of water, and when any animal is confined for a period 24 hours sufficient food must also be provided.
- (3) Before stunning an animal, the head must be securely fastened and the appliances and methods used in slaughtering must be requisite to secure the infliction of as little suffering as possible.
- (4) An animal must not be slaughtered in the view of another animal.
- (5) Only persons whose ability and physical condition are satisfactory may slaughter animals, and when using a mechanically operated stunning instrument it must be used in a proper manner and be in a proper state of repair.
- (6) As far as is practicable no blood or other refuse shall flow from the slaughterhouse so as to be within sight of any animal in the slaughterhouse, and shall not be disposed in the waiting pens or lairs.

There were two prosecutions under this Act. A youth under 18 years of age was charged with unlawfully slaughtering or stunning certain lambs in a slaughterhouse in the City and not holding a licence authorising him to do so.

He was convicted and fined 12s. 6d. and ordered to pay 7s. 6d. costs.

One slaughterman was charged with unlawfully slaughtering cattle in a slaughterhouse in the City, such slaughtering not being effected by means of a mechanically operated instrument.

He was convicted of the offence charged against him and fined £3 and ordered to pay 40s. costs.

In accordance with the provisions contained in Section 3 of the Act 38 slaughtermen have been licensed.

### **Retail Meat Shops.**

The retail shops have been regularly visited. It is not necessary for retail butchers to be registered, but a register is kept in the Department as it ensures better supervision.

There are 295 retail meat shops. This number does not represent all the retail butchers in Salford as without compulsory registration it is impossible to keep the register strictly correct; new shops being frequently opened and existing ones changing hands.

Generally speaking, the retail meat shops are kept in a satisfactory manner, but occasionally complaints have had to be made as to general untidiness, such as allowing rubbish to accumulate on the floor and benches, and failure to make proper use of covered receptacles for bones and other refuse.

A simple standard for retail shops is the absence of any strong meaty smell on entering the premises.

In a few instances unsound meat was found, but in no case did the facts warrant proceedings being taken, the occupiers being allowed to surrender the meat for destruction.

On the 7th January, 1935, the Merchandise Marks (Imported Goods) No. 7 Order, 1934, came into operation, and shortly afterwards part 3 of the Sale of Food Order of 1921 relating to the marking of imported meat, was revoked. The new Order requires that all imported meat shall be marked with an indication of origin on sale or exposure for sale, whether by wholesale or by retail. The expression "indication of origin" means either (a) the word "Empire" or the word "Foreign" as the case may require, or (b) a definite indication of the country in which the meat was produced.

A leaflet explaining the main provisions of the Order was given to all retail butchers and the Order was explained by the Inspectors in person.

In many instances the method of marking the meat is not strictly in accordance with the provisions of the Order. Written and verbal warnings have been given, and in one instance the facts were reported to the Health Committee and the Town Clerk was instructed to write to the butcher concerned.

### Food Preparing Premises.

As in the case of retail meat shops there is no compulsory registration of food preparing premises. Better supervision could be maintained if all such premises had to be registered. The majority of the food preparing premises are premises where meat products such as Brawn, Sausages, Blackpuddings, Pies, etc., are made. They are regularly visited and attention is paid to the cleanliness of the utensils and of the premises and the persons working therein. Special note is taken of the quality and methods of handling the meat. In some cases fault was found regarding the general untidiness of the premises, but in no case was it necessary to take legal proceedings. Some of the premises are rather cramped for room, but, generally speaking, they may be regarded as satisfactory.

### Bakehouses.

The domestic bakehouses are under the supervision of the Sanitary Department, but bakehouses where males are employed are supervised by the Veterinary Department. There are twenty-three such bakehouses, and, as in the case of food preparing premises, the most frequent cause for complaint was untidiness. Complaints made by the Inspectors resulted in a satisfactory improvement being made in every case.

### Offensive Trades.

The following is a list of the offensive trades in the City. There have been no complaints arising from these trades.

#### NATURE OF TRADES.

Tripe Dressing.....	4
Soap Works.....	2
Tanneries.....	1
Skin Dressers.....	1
Gut Scrapers.....	1
Total.....	9

## SECTION V.

# Pathological Laboratory Report

The appended table shows the work carried out at the City Laboratory and at Hope Hospital Laboratory during 1935.

The total number of specimens examined was 36,432.

There is still an increasing demand for extra investigations to be carried out at the Hospital laboratory, but the actual increase in work done there is small, as the present staff are fully occupied, and it has been impossible for them to comply with all the demands made upon their services in the time at their disposal. Towards the end of 1935 an extra technical assistant was appointed at Hope Hospital, and this has eased the situation considerably.

The work on the serum treatment of pneumonia is still being carried on, and the results of Dr. Stent's work, in conjunction with Dr. Mackay and Dr. Langley, will be published shortly in the *Quarterly Journal of Medicine*.

Towards the end of 1935, in co-operation with Dr. Mackay, in order to cope with the impending epidemic of measles, 2,000 c.c. of "anti-measles" serum was collected, filtered and put up in sterile 10 c.c. ampoules. The serum was collected from young adults who had had measles, and administered to children in the Hospital who had been in recent contact with the disease. The procedure followed was in accordance with that carried out by the London County Council and other large centres, with the aim of controlling outbreaks of measles in the Hospital wards.

The complement fixation test for gonorrhœa is now being carried out as a routine at the City Laboratory.

1,212 specimens of blood were examined last year, mainly as an additional test for cure in treated cases of gonorrhœa, and occasionally as an aid to diagnosis in doubtful cases. The information supplied by the test to the Venereal Diseases Department has rendered considerable assistance as a guide to treatment, and as a test for cure in gonorrhœa.



Towards the end of 1935, arrangements were made to carry out the new phosphatase test for pasteurisation of milk.

Only 31 samples of pasteurised milk were examined before the end of 1935, so it is too early to give a definite opinion on the value of the test, but the results up to the present indicate that it is the only reliable method for the detection of efficient milk pasteurisation. The tests were made by Mr. W. E. Portwood at Hope Hospital Laboratory.

During the past two years there has been considerable correspondence and several articles in the medical journals on the value of the swab in diphtheria diagnosis. Two American workers, Folgis and Sole, have described a rapid culture method which claims to give approximately 90 per cent. of positive results at the end of four hours. The work has been confirmed by Dr. H. J. Parrish, of the Wellcome Research Laboratory, and a similar method has been carried out by some German workers with corresponding results.

A small number of cases of diphtheria from the Infectious Diseases Hospital were examined by this rapid cultivation method, which was compared with the ordinary routine methods employed for the diagnosis of diphtheria in the City Laboratory, namely the direct smear and cultivation on Loeffler's serum.

The procedure used for the rapid cultivation of the diphtheria bacillus is as follows: Ordinary diphtheria swabs are soaked in sterile serum and heated in the hot air oven at 80 degrees C. for fifteen minutes. A swab is taken from the throat in the usual way with this serum impregnated swab, which is incubated for four hours, after which a direct smear is made, stained and examined for diphtheria bacilli.

It is claimed that the diphtheria bacillus grows rapidly on the specially prepared swab.

Cultures were made in this way from 82 cases of typical clinical diphtheria. At the same time two extra swabs were taken from each case, one of which was examined by direct smear and the other cultured on Loeffler's serum, and examined the following morning. The results were as follows:—

	Number positive on :		
	(1) Special Swab.	(2) Direct Smear.	(3) Loeffler Culture.
Total No. of Cases.	69	66	71
82			

The main point of interest in the above results is the high proportion of positives obtained by the ordinary direct smear in cases of typical clinical diphtheria. A slightly higher proportion was obtained by the rapid culture method, but this may easily have been due to chance, as the numbers are small, and, in addition, each case was always swabbed first with the specially prepared swab.

A similar investigation was carried out on 38 cases of "doubtful diphtheria," *i.e.*, cases which at the time of swabbing showed no obvious visible membrane. The majority of these were late cases and membrane had disappeared as the result of treatment. The results were as follows:—

	Number positive on :		
	(1) Special Swab	(2) Direct Smear.	(3) Lœffler Culture.
Total No. of Cases. 38	12	11	34

As in the previous series, the rapid method of cultivation on specially prepared swabs shows no definite advantage over the ordinary direct smear.

It is interesting to note, however, that in these cases of "doubtful diphtheria" with the absence of obvious membrane, the percentage of positive cases detected by the ordinary Lœffler culture method far exceeds that detected by the direct smear or rapid culture method.

The number of cases examined is, of course, very small, but we hope to continue the work on a larger scale.

As pointed out several years ago, approximately 50 per cent. of the swabs sent to the City Laboratory for detection of the diphtheria bacillus, which are positive on culture on Lœffler's serum, are also positive on direct smear. Moreover, we have no reason to believe that the direct smear, if examined by a competent observer, is liable to give fallacious results.



## PATHOLOGICAL LABORATORY REPORT

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Nature of Investigations.	Lady- well Sana- torium.	Hope Hospital.	Veterinary Depart- ment.	Tuber- culosis Depart- ment.	Veneral Diseases Depart- ment.	School Medical Depart- ment.	Maternity and Child Welfare Depart- ment.	General Practi- tioners.	Salford Royal Hospital.	General.	Total.
Blood Grouping.....	—	7	—	—	—	—	—	—	—	—	7
Haemoglobin Estimation.....	—	33	—	—	—	—	—	—	—	—	33
Anti-Haemolysin Estimation.....	—	6	—	—	—	—	—	—	—	—	6
Blood Films.....	—	108	—	—	—	—	—	—	—	—	108
Blood Counts.....	—	274	—	—	—	—	—	—	—	—	274
Blood Urea.....	—	369	—	—	—	—	—	—	—	—	369
Blood Sugar.....	—	554	—	—	—	—	—	—	—	—	554
Blood Occult.....	—	116	—	—	—	—	—	—	—	—	116
Blood Calcium.....	—	41	—	—	—	—	—	—	—	—	41
Fragility Tests.....	—	5	—	—	—	—	—	—	—	—	5
Exudates, bacteriological ex- amination.....	—	242	—	—	—	—	—	—	—	—	242
Fractional Test Meals.....	—	237	—	—	—	—	—	—	—	—	237
Urea Concentration Tests.....	—	302	—	—	—	—	—	—	—	—	302
Pleural Fluid. Complete examination.....	1	97	—	—	—	—	—	—	—	—	97
Van den Bergh Reaction.....	—	13	—	—	—	—	—	—	—	—	13
Faeces for Tuberculosis.....	—	2	—	—	—	—	—	—	—	—	2
Reticulocyte Counts.....	—	205	—	—	—	—	—	—	—	—	205
Platelet Count.....	—	1	—	—	—	—	—	—	—	—	1
Sputa Inoculations for Typing Immunity (Pneumonia).....	1	168	—	—	—	—	—	—	—	—	169
Sputum Concentration.....	—	644	—	—	—	—	—	—	—	—	644
Coagulation Time.....	—	1	—	—	—	—	—	—	—	—	1
Diastase Estimation.....	—	4	—	—	—	—	—	—	—	—	4
Histological Sections.....	1	276	—	—	—	—	—	—	—	—	277
Additional Histological Sections	—	123	—	—	—	—	—	—	—	—	123
Post-mortem Examinations.....	—	116	—	—	—	—	—	—	—	—	116
Direct Typing of Sputa.....	1	169	—	—	—	—	—	—	—	—	170
Colloidal Gold Tests.....	—	3	—	—	—	—	—	—	—	—	3
Anaerobic Cultures.....	—	6	—	—	—	—	—	—	—	—	6
Fermentation Test.....	—	1	—	—	—	—	—	—	—	—	1
Urine, Chemical Examinations	—	58	—	—	—	—	—	—	—	—	58
Milk, Phosphatase Estimations	—	31	—	—	—	—	—	—	—	—	31
Preparation of Measles Serum, 10 c.c. Bottles.....	—	200	—	—	—	—	—	—	—	—	200
Preparation of Museum Specimens.....	—	6	—	—	—	—	—	—	—	—	6
	7,595	10,929	719	832	8,735	3,216	14	3,541	728	123	36,432

SECTION VI.

Report relating to the  
City Analyst's Department.



In the following Table (Table 1) will be found particulars of 1,275 samples of Foods and Drugs examined by the Public Analyst during 1935.

TABLE 1.

SAMPLES.	Number Examined.	Number Adulterated.		Per cent. Adulteration.
		Preservatives Only.	Other Ways.	
Milk .....	1,020	—	47	4.6
Skim Milk .....	14	—	—	—
Evaporated Milk .....	1	—	—	—
Condensed Milk .....	5	—	—	—
Cream .....	2	—	—	—
Butter .....	5	—	1	20.0
Cheese .....	11	—	1	9.1
Margarine .....	4	—	2	50.0
Lard .....	5	—	4	80.0
Lard Compound .....	2	—	—	—
Suet .....	4	—	—	—
Tea .....	5	—	—	—
Cocoa .....	8	—	—	—
Sugar .....	4	—	—	—
Flour .....	7	—	—	—
Jam .....	21	7	—	33.3
Marmalade .....	3	—	—	—
Syrup .....	2	—	—	—
Black Treacle .....	1	—	1	100.0
Minced Meat .....	11	2	—	18.2
Sausage .....	7	1	3	4.3
Sausage Filler .....	2	—	—	—
Mustard .....	1	—	—	—
Mustard Pickles .....	4	—	—	—
Rice .....	6	—	—	—
Barley .....	2	—	—	—
Tapioca .....	2	—	—	—
Currants .....	5	—	—	—
Raisins .....	2	—	1	50.0
Sultanas .....	3	—	—	—
Prunes .....	1	—	1	100.0
Glace Cherries .....	3	—	—	—
Candied Peel .....	1	—	—	—
Malt Food .....	1	—	—	—
Chocolate .....	7	—	—	—
Toffee .....	1	—	1	100.0
Cream Cake .....	3	—	—	—
Vitamin Cream Emulsion .....	1	—	—	—
Cod Liver Oil .....	1	—	—	—
Cod Liver Oil and Malt Extract .....	2	—	—	—
Halibut Liver Oil .....	4	—	—	—
Olive Oil .....	9	—	—	—
Castor Oil .....	2	—	—	—
Camphorated Oil .....	1	—	—	—
Pennyroyal Syrup .....	1	—	—	—
Aspirin Tablets .....	1	—	—	—

TABLE I. - Continued.

SAMPLES.	Number Examined.	Number Adulterated.		Per cent. Adulteration.
		Preservatives Only.	Other Ways.	
Seidlitz Powder .....	2	—	—	—
Epsom Salts .....	4	—	—	—
Rochelle Salts .....	3	—	—	—
Glauber Salts .....	4	—	—	—
Iodine .....	2	—	—	—
Iodine Paint .....	5	—	5	100.0
Iodine Ointment .....	4	—	3	75.0
Iodine Cream .....	1	—	1	100.0
Zinc Ointment .....	2	—	—	—
Boracic Ointment .....	2	—	—	—
Sulphur Ointment .....	2	—	—	—
Lysol Ointment .....	2	—	—	—
Lysol Powder .....	1	—	1	100.0
Lysol Soap .....	3	—	2	66.6
Disinfecting Powder .....	2	—	1	50.0
Disinfectant .....	8	—	—	—
Soap Powder .....	2	—	2	100.0
Turpentine .....	2	—	—	—
Turpentine Substitute .....	1	—	—	—
Borax .....	2	—	—	—
Whisky .....	13	—	2	15.4
	1,275	10	79	7.0

TABLE 2.

PERCENTAGE ADULTERATION—SALFORD.

Year.	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Percentage of Adulteration....	4.5	4.3	4.7	3.0	3.2	3.3	2.9	4.0	3.3	7.0
Total Samples.....	1387	1452	1484	1491	1556	1445	1286	1337	1374	1275
Formal Samples	765	744	733	727	598	574	462	521	586	574
Informal „	622	738	751	764	958	871	824	816	788	701
No. of Samples per 100,000 of the population.	563	593	593	596	622	642	576	607	643	596

TABLE 3.

ADULTERATION OF MILK—SALFORD.

Year.	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Number of Samples.	833	921	994	1028	1103	1100	1106	1003	885	1006	1027	1020
Percentage of Adulteration ....	2.6	4.7	2.5	2.1	3.9	2.5	3.3	2.1	1.7	4.2	1.2	4.6

MILK ADULTERATION—ENGLAND AND WALES.

Year.	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Percentage of Adulteration ....	7.7	8.3	7.4	6.9	8.2	7.8	6.6	6.4	7.3	7.7	7.2	Not available

TABLE 4.

AVERAGE COMPOSITION OF ALL MILK, 1935.

Month.	Number of Samples.	Total Solids per cent.	Fat per cent.	Solids-not-fat per cent.
January.....	112	(12.45	(3.65	(8.80
February.....	93	12.44 12.43	3.60 3.57	8.84 8.86
March.....	121	(12.44	(3.58	(8.86
April.....	88	(12.33	(3.48	(8.85
May.....	94	12.30 12.30	3.46 3.45	8.84 8.85
June.....	51	(12.25	(3.46	(8.79
July.....	74	(12.42	(3.61	(8.81
August.....	68	12.51 12.31	3.71 3.61	8.80 8.70
September.....	66	(12.80	(3.93	(8.87
October.....	113	(12.91	(3.98	(8.93
November.....	72	12.77 12.74	3.85 3.80	8.92 8.94
December.....	68	(12.57	(3.68	(8.89
	1,020	12.50	3.65	8.85

TABLE 5.

AVERAGE COMPOSITION OF FARMERS' MILK, 1935.

Month.	Number of Samples.	Total Solids per cent.	Fat per cent.	Solids-not-fat per cent.
January.....	59	(12.52	(3.76	(8.76
February.....	17	12.57 12.73	3.74 3.76	8.83 8.97
March.....	35	(12.58	(3.71	(8.87
April.....	27	(12.41	(3.57	(8.84
May.....	46	12.29 12.32	3.48 3.47	8.81 8.85
June.....	17	(12.02	(3.38	(8.64
July.....	11	(12.55	(3.85	(8.70
August.....	17	12.65 12.35	3.89 3.68	8.76 8.67
September.....	19	(12.97	(4.09	(8.88
October.....	32	(13.09	(4.15	(8.94
November.....	13	12.95 12.88	3.95 3.77	8.98 9.11
December.....	15	(12.69	(3.69	(9.00
	308	12.57	3.73	8.84

TABLE 6.

AVERAGE COMPOSITION OF MILK OTHER THAN FARMERS' MILK, 1935.

Month.	Number of Samples.	Total Solids per cent.	Fat per cent.	Solids-not-fat per cent.
January.....	53	12.38	3.53	8.85
February.....	76			
March.....	86			
April.....	61	12.39	3.45	8.85
May.....	48			
June.....	34			
July.....	63	12.46	3.66	8.80
August.....	51			
September.....	47			
October.....	81	12.72	3.82	8.90
November.....	59			
December.....	53			
	712	12.47	3.62	8.85

TABLE 7.

MILK ADULTERATION.

No.	Nature of Adulteration.	Action Taken.	Remarks.
8958	Deficient 5.9% solids-not-fat.	Informal. Formal samples taken, see 8970-2.	Taken in course of delivery.
8970	Deficient 3.3% solids-not-fat.	Farm visited. See 8974 and 8976.	Taken in course of delivery.
8971	Deficient 5.3% solids-not-fat.		
8972	Deficient 12.2% solids-not-fat.		
8973	Deficient 5.1% solids-not-fat.	Second visit paid to farm.	Appeal to Cow. Samples.
8974	Deficient 4.3% solids-not-fat.		
8976	Deficient 2.2% solids-not-fat.	Strong caution.	
A 19	Deficient 3.5% solids-not-fat.	Appropriate local authority informed.	Brought into Salford by road.
A152	Deficient 3.3% fat.	Further samples.	Further samples genuine.
9089	Deficient 3.3% fat.	Wholesaler sampled. See 9093.	Retailer.
9093	Deficient 13.3% fat.	Wholesaler. Small leak in cooler. Repaired and made good.	Further samples genuine.



TABLE 7.—*Continued.*

No.	Nature of Adulteration.	Action Taken.	Remarks.
9192	Deficient 3.3% fat.	None.	7 other samples genuine.
9218	Deficient 6.6% fat.	Bottlers sampled. See 9229-30.	Retailer.
9229	Deficient 1.6% fat.	Informal. Formal sample taken. See 9231.	Bottler.
9230	Deficient 8.3% fat.		
9231	Deficient 11.8% fat.	Prosecution.	Fined £3 and 21s. costs.
9232	Deficient 1.2% solids-not-fat.	All the milk of one farmer. Further samples genuine.	Amount of extraneous water as shown by freezing point test
9233	Deficient 0.6% solids-not-fat.		6% 6% 5% 5% 4% 3%
9244	.....		
9245	Deficient 1.2% solids-not-fat.		
9250	.....		
9251	Deficient 6.6% fat.	All the milk of one dairy man, the wholesaler, Prosecution in respect of No. 9266.	Fined 10s., £1-11-6 costs.
9259	Contained annatto.		
9262	Contained annatto.		
9263	Contained annatto.		
9266	Contained annatto.	Farm visited.	Cows giving milk of poor quality. See also Nos. 9342 and 9353.
9267	Deficient 13.3% fat.		
9268	Deficient 6.6% fat.		
9269	Deficient 5% fat.	Same wholesaler as Nos. 9259, 9262 and 9263.	Further samples genuine.
9279	Contained annatto.		
9280	Contained annatto.		
9281	Contained annatto.		
9342	Deficient 1.2% solids-not-fat.	See 9267-8 and 9	Taken on delivery from farmer.
9343	Deficient 1.2% solids-not-fat.)	Informal samples See 9354-5 and 9369-70.	
9344	Deficient 3.5% solids-not-fat.)		
9345	Deficient 1.2% solids-not-fat.)	See 9267-8-9, 9342.	Formal samples taken following 9342 and 9344.
9353	Deficient 0.6% solids-not-fat.)		
9354	Deficient 1.2% solids-not-fat.)	Supply kept under observation.	
9355	Deficient 1.2% solids-not-fat and 6.0% fat.)		
9369	Deficient 2.3% solids-not-fat.)	Dairyman communicated with farmer. Leaky cooler.	*Retailer (Dairyman) excess water 6%; by freezing point test 7%.
9370	Deficient 1.6% fat.)		
9535	Deficient 1.2% solids-not-fat.)	Farm visited.	Taken on delivery from farmer.
9536	.....		
9553	Deficient 3.5% solids-not-fat.)	Prosecution.	Conviction. 21s. costs.
9554	Deficient 3.5% solids-not-fat.)		
9699	Deficient 9.8% solids-not-fat.	Formal sample genuine.	Informal.
9976	Deficient 5% fat.		

### Milk.

Of 1,020 samples, 47 were adulterated or below standard. This figure represents a percentage of 4.6, the highest since the year 1925 when the figure was 4.7 per cent. Actually the position is not quite so bad as the statistics suggest since often several samples have to be taken to follow up a suspected offence. Examples of this will be noted in the following account. While, nevertheless, there is no doubt that in the year under review considerably more adulteration of milk was detected in Salford than for some time past, the percentage figure is still well below that of the country as a whole, for which details are given in Table 3.

Of the 47 unsatisfactory samples, 13 were below the limit for fat, raising the presumption that they had been skimmed, 24 had apparently been watered, three were deficient in both fat and solids-not-fat and seven contained added colouring matter. It is interesting to notice that these 47 samples represented but 15 "cases." In the Annual Report for 1932 an account was given of the steps which the Sampling Officer takes as a matter of course in following up an adulterated sample, steps which may lead him backwards in the chain, retailer-wholesaler-farmer, and on occasions to the cows themselves. Such measures inevitably lead to a multiplication of samples, but the most important fact of all is that in only three cases were proceedings instituted. As is explained on another page prosecution is not the favourite weapon of this department.

\* The following account gives a brief history of the more interesting adulterated samples.

#### SAMPLES NUMBERS 8958, 8970-4, 8976.

This series was obtained as a result of the first sample proving deficient in solids-not-fat. It was taken informally in course of delivery to a Salford dairyman. A formal sampling (Numbers 8970-73) of the whole of the farmer's delivery was made the next day. These were also considerably deficient in solids-not-fat, and appeared, upon the freezing point test, to contain between 8 and 10 per cent. of extraneous water. The farm was visited and samples of the morning and evening milk obtained. Out of five samples thus procured two again (Numbers 8974 and 8976) appeared, both on the evidence of solids-not-fat and freezing point, to contain extraneous water, though this now amounted only from 3 to 5 per cent. The farm was a fairly large one with 60 cows and the Sampling Officer, who had but one assistant upon this visit, found himself unable to keep a complete watch upon the three milkers and the dairy. Consequently, a second visit was paid to the farm and upon this occasion the Sampling Officer took three assistants. It is significant that upon this second visit milk of better quality was obtained, although the solids-not-fat and freezing point depression were still somewhat low, but the figures recorded were just about on the lower limit for genuine milk. The milk as a whole was slightly abnormal in character, this no doubt being due to the fact that about half the herd was drying off.

This was an unusually difficult case. There can exist no reasonable doubt that the first samples, that is, Numbers 8958, 8970-4 and 8976, contained extraneous water. At the same time it was considered that the somewhat abnormal

character of the herd and its milk and the probable presence of extraneous water in the first "appeal" samples would introduce factors of difficulty into prosecution. Upon the last visit to the farm a small quantity of water was observed in the bottom of the churns which had been cleansed and placed in the dairy in readiness to receive the milk. This may, of course, have been due to nothing worse than carelessness. After consideration a strong letter of caution was sent to the farmer and a careful watch kept upon his milk as it came into Salford. It subsequently improved up to average quality.

The following table shows details of all the samples taken in the investigation of this case:—

Samp. No.	Obtained from.	Fat.	Solids-not-fat.	Total Solids.	Freezing Point Δ Hortvet	% Extraneous water calcul. from Freezing Point.	
						S-n-f.	Point.
8958	{ Upon delivery to Salford dairyman.	3.3	8.0	11.3	0.490	5.9	7.6
8970	{ Formal samples taken upon delivery in Salford.	3.6	8.22	11.82	0.502	3.3	5.3
8971		3.3	8.05	11.35	0.481	5.3	9.2
8972		3.2	7.46	10.66	0.472	12.2	10.9
8973		3.7	8.09	11.79	0.503	5.1	5.1
8974	{ Appeal to Cow	4.2	8.13	12.33	0.503	4.3	5.1
8975		3.9	8.6	12.5	0.538	none	none
8976		3.2	8.3	11.5	0.511	2.2	3.6
8977		3.3	8.6	11.9	0.537	none	none
8978		3.4	8.6	12.0	0.538	none	none
8979	{ Second Appeal to Cow.	4.08	8.47	12.55	0.532	0.4	none
8980		4.4	8.3	12.7	0.530	2.3	none
8981		3.5	8.7	12.2	0.545	none	none
8982		3.4	8.6	12.0	0.544	none	none
8983		3.8	8.5	12.3	0.542	none	none

#### SAMPLES NUMBERS 9218, 9229-31.

In following up fat deficiency in the first sample obtained from a Salford retailer, the subsequent samples were taken on delivery from the Wigan firm sterilising and bottling the milk. On the first sampling on delivery fat deficiencies of 6.6 and 1.6 per cent. were recorded and the following day sample Number 9231 was 11.8 per cent. deficient in fat. Upon this sample proceedings were instituted and the bottlers were fined £3 and £1 1s. 0d. costs.

#### SAMPLES NUMBERS 9259, 9262, 9263, 9266-9, 9279-81, 9342 AND 9353.

All these samples were taken in connection with an unusual case in these days, namely, the addition of colour to milk. The samples all concern the milk of one dairyman, whose business was mainly a wholesale one. Those samples bought from him or from retailers supplied by him all contained added colour, whereas the milk of the farmers supplying him all proved innocent of such addition. Upon a summons in connection with sample Number 9266 he was convicted and fined 10s. with £1 11s. 6d. costs.

The colour used was annatto which is derived from the berries of a shrub which flourishes in Central America and India. It is used in colouring cheese and sometimes butter and for such purposes its employment is legal. At one time it was not uncommon for dairymen to add it to milk to give an unwarranted appearance of richness, but to do this to-day is contrary to the law, and it is very rare to meet a case of such addition.

In the course of this investigation it was necessary to sample the milk of the three farmers supplying the dairyman. These, as has been stated, did not contain added colour, but the milk of one of them, represented by samples numbers 9267-9, was deficient in fat. The farm was visited and the natural milk of the cows—especially the morning milk—was found to be of poor quality. Under these circumstances it was decided not to proceed against the farmer. The supply was kept under observation, and though early samples, numbers 9342 and 9353, were slightly below the minimum figure of 3 per cent. fat of the Sale of Milk Regulations, it finally improved.

#### SAMPLE NUMBER 9699.

This was bought from a farmer who himself retails his own milk in Salford. The analytical figures were: fat 4.4 per cent.; solids-not-fat 7.67 per cent.; freezing point depression 0.440 degrees C. Calculating the percentage of extraneous water in the usual way, the figure upon the basis of the non-fatty solids was 9.8 per cent., but the freezing point indicated 17 per cent. The difference between these two amounts is rather unusual. As will be seen from a glance at Appendix I. the amount of extraneous water deduced from the freezing point is generally more than that determined upon the basis of the percentage of the non-fatty solids. This is quite easy to understand. The law fixes 8.5 per cent. as the *minimum* likely percentage of solids-not-fat in a genuine milk. So that in calculating how much water must be added to reduce this amount to that actually found in any sample, the assumption is being made that the original milk contained 8.5 per cent. non-fatty solids. As this is a minimum amount it naturally follows that nearly always the original milk did not contain this amount but more, and consequently more than the calculated amount of water would, in fact, be necessary to reduce the solids-not-fat from their original level to that found when the watered sample was analysed. Analysts believe that the freezing point generally gives a much truer idea of what the actual amount of water is. Since the *average* amount of solids-not-fat in milk is between 8.8 and 8.9 per cent. it follows that the freezing test is likely, on the average, to indicate from about 3 to 5 per cent. more water in adulterated milks than does a calculation based on the non-fatty solids figure.

Returning now to the analysis of the sample in this case, there is a difference between the two estimations of added water of over 7 per cent., in fact, one figure is very nearly double the other. Here then, was a more than usual discrepancy between the two figures or else the original milk contained an abnormally high percentage of solids-not-fat. If the amount of added water deduced from the freezing point (17 per cent.) is correct, then a simple calculation shows that the non-fatty solids in the original milk must have been 9.0 and the fat 5.15 per cent.—a very rich milk.



Thus, although in this case, there was no real necessity to visit the farm, it was decided to do so and the five samples obtained direct from the cows gave the following figures :—

No.	Total Solids.	Fat.	Solids-not-fat.	Freezing Point Δ Hortvet.
9707.....	14.4	5.2	9.2	0.545
9708.....	13.9	5.0	8.9	0.548
9709.....	14.3	4.75	9.55	0.545
9710.....	13.6	4.65	8.95	0.535
9711.....	14.0	4.7	9.3	0.533

The milk given by the cows was exceptionally rich, the non-fatty solids average 9.38 and the amount of water necessary to reduce this to the level of sample number 9699 is 18.2 per cent., a striking agreement with the freezing point method.

The Sampling Officer's visit to the farm also cleared up another point, how the water got into the milk. The waste pipe from the cooler was but loosely connected to a long length of metal piping through which the overflow from the cooler should have gone to the drain. This was not difficult to see : the Inspector observed at once and also discovered that the farmer had known of it for about a fortnight and taken no steps to remedy the defect. Water which should have gone to waste was flowing down the outside of the cooler and into the churn placed below to collect the milk. In face of such wilful carelessness there was no alternative but to prosecute. The farmer was convicted and ordered to pay costs, £1 1s. 0d.

Considerable mention of the freezing point test has been made in the foregoing accounts, and, in fact, considerable use has been made of it in the laboratory. It has been applied to 65 samples during the year and those interested will find the details of each of these samples given in Appendix I.

This test may now be said to be firmly established and is accepted by courts all over the country. For the detection and estimation of added water in milk it is the most accurate and reliable of all tests and rests on the most solid basis of scientific theory. It should not be thought that the preference of Public Analysts for this new test is due to the fact that it gives a higher figure for added water than did methods previously available. This preference is simply because of its accuracy and certainty. The test quite often operates in favour of the vendor. It may show a milk to be genuine though the solids-not-fat are below 8.5 per cent., which means that without this test the milk would have been presumed to be adulterated. There are no less than 10 examples of this in the 65 milks examined this year by this method. The numbers of the samples in question (see Appendix) are 8979, 8980, 8983, M 91, M 107, 9262, 9472, 9475, 9549 and 9550. All these samples have been classed as genuine. Thus the analyst and the consumer are not the only ones to benefit from a test which upon its introduction raised a fierce storm of criticism ; its increased accuracy operates in cases of doubt equally in the interests of the milk dealer and the farmer.



Under Section 16 of the Food and Drugs Act, the Sampling Officer has power to take samples of milk in the course of delivery from the farmer to the wholesaler or the retailer. Before the large growth of road transport such samples were usually taken at railway stations, but to-day the Inspector has to meet lorries as well. The purpose of this sampling is, of course, to provide the Local Authority with some check and control upon the milk which is being sent into its area and it also serves as some protection for the dealer, since milk already adulterated or deficient upon delivery to him may be detected. Advantage is taken of these powers in following up an adulterated sample bought from a retailer in sampling the supply to him from wholesaler or farmer.

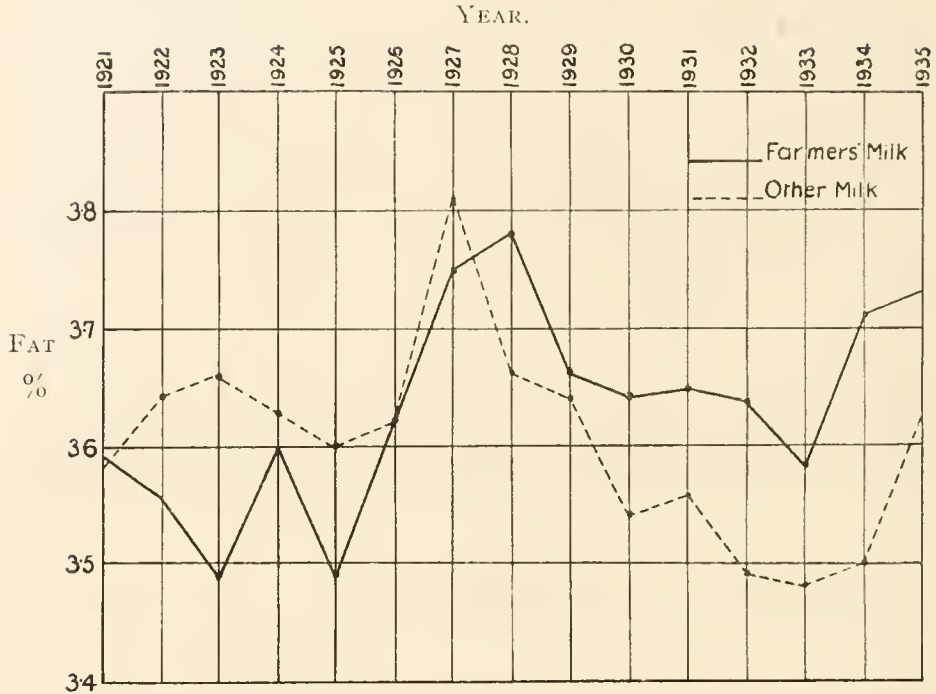
The results of this sampling over a period of years in Salford have been separated into two categories, here called for convenience Farmers' Milk and Other Milk. The first class may be taken to represent the milk supplied by the farmers to the local dealers and the second the milk supplied by the latter to the consumer. The two sets of figures are given from 1921 to 1935, inclusive :

TABLE 8.

Year.	FARMER'S MILK.			OTHER MILK.		
	Fat.	Solids-not-fat.	Total Solids.	Fat.	Solids-not-fat.	Total Solids.
1935 .....	3.73	8.84	12.57	3.62	8.85	12.47
1934 .....	3.71	8.82	12.53	3.50	8.82	12.32
1933 .....	3.58	8.82	12.40	3.48	8.77	12.25
1932 .....	3.64	8.92	12.56	3.49	8.90	12.39
1931 .....	3.65	8.91	12.56	3.56	8.92	12.48
1930 .....	3.64	8.88	12.52	3.54	8.94	12.48
1929 .....	3.66	8.81	12.47	3.64	8.84	12.48
1928 .....	3.78	8.56	12.34	3.66	8.57	12.23
1927 .....	3.75	8.79	12.54	3.81	8.82	12.63
1926 .....	3.62	8.77	12.39	3.62	8.81	12.43
1925 .....	3.49	8.75	12.24	3.60	8.92	12.52
1924 .....	3.60	8.62	12.22	3.63	8.87	12.50
1923 .....	3.49	8.86	12.35	3.66	8.96	12.62
1922 .....	3.56	8.82	12.38	3.64	8.88	12.52
1921 .....	3.59	8.93	12.52	3.58	8.95	12.53

Consideration of these figures may be commenced with the observations that given perfect sampling and in the absence of adulteration the two sets of figures should agree for any particular year, the average quality of the milk passed on by the dealer to the consumer being identical with that of the milk received by him from the farmer. The most striking discrepancy in these figures is in the fat percentages and this is shown by the following curve :—

FIG. 1.



There is one remarkable fact apparent here. The year 1928, which in Table 8 is separated by a heavy line from the preceding years, saw a change which it would be interesting to be able to understand. From 1922 to 1927 "Farmers' Milk," as sampled by this department, contained less fat than "Other Milk." In 1928 the position was reversed and has remained so ever since. If the sampling were perfect in that it represented a perfectly true average in the mathematical sense of all the milk received and all the milk sold in the city, there could be but one deduction to be drawn from the figures — that up to and including the year 1927 local dealers had been adding milk fat to the milk they received and from 1928 onwards they adopted the opposite course and removed some of the fat. Since these are averages, the whole yearly supply of the city being represented by one figure only, these operations will also have been carried on with regard to practically all the milk sold and on nearly every day of the year. That dealers should systematically add fat to their milk for a period of years is manifestly absurd and that during the next period they should remove a small but very noticeable proportion of the fat is also practically unthinkable.

What then, if anything, is the significance of these figures? The sampling is, in fact, far from perfect in the mathematical sense of representing a true average of the milk of the city, and, indeed, it is carried out with other aims, chiefly, of course, in order to detect adulteration. This results in the inclusion of a higher proportion of adulterated samples in each class in relation to genuine samples. Actually, however, the class of "Farmers' Milk" is likely to be more affected than "Other Milk" since when the Inspector buys a routine sample of the latter type the odds against it being adulterated or deficient are at least 20 to 1

—on the assumption of 5 per cent. of adulterated milk samples received by the department and in recent years the figure has generally been below this. But if the routine sample from the dealer is not up to standard, there may be four reasons for this :—

- The cow—giving milk below standard.
- The farmer—adulteration or negligence.
- The wholesaler—adulteration or negligence.
- The retailer - adulteration or negligence.

If the cause is either of the two first, then the farmer's milk is likely to be below standard ; when the Inspector follows up his sampling of the retailer by sampling the farmer upon delivery, the chances that this sample will be below standard may be taken as from " evens " to 2 to 1 in favour of adulteration. In other words, from the nature of the sampling, " Farmers' Milk " is likely to contain a larger relative number of samples below standard than " Other Milk," and these samples will tend to pull the recorded average of " Farmers' Milk " further below the truth than in the case of " Other Milk." Here then is the explanation of the apparently impossible state of affairs from 1922 to 1927, the suggestion in the figures of Table 8 that the dealers in Salford were selling milk actually *better* than they received.

But what of subsequent years ? The apparent deficiency of dealers' milk below farmers' milk is likely to be less than the actual—the true state of affairs was probably slightly worse than shown in Table 8 or Fig. 1.

For this reason the adulterated samples have been removed from each class for the years 1923 to 1935, and Table 9 gives the figures for genuine " Farmers' Milk " and genuine " Dealers' Milk."

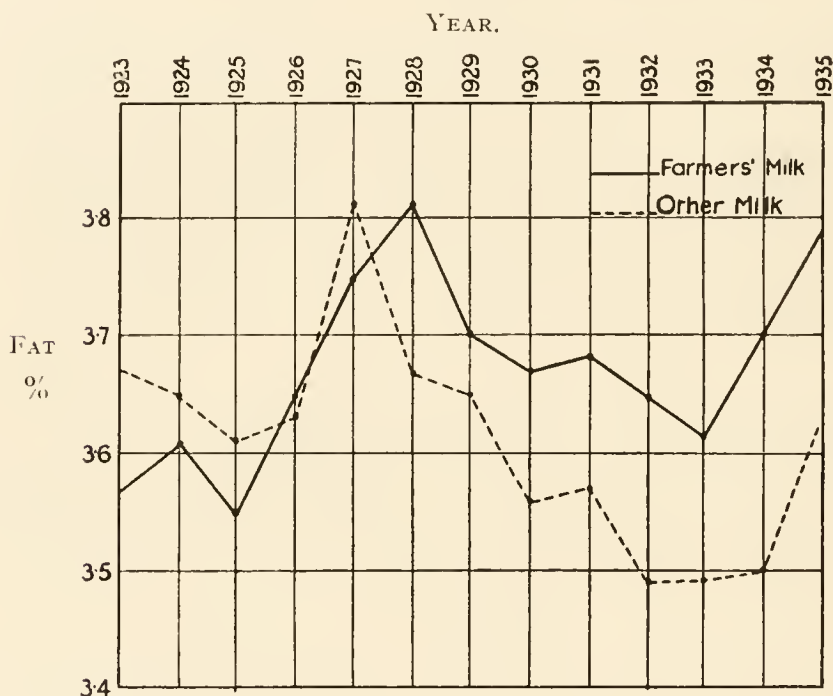
TABLE 9.

Year.	FARMER'S MILK.			DEALERS' MILK.		
	Fat.	Solids-not-fat.	Total Solids.	Fat.	Solids-not-fat.	Total Solids.
1935.....	3.79	8.89	12.68	3.63	8.86	12.49
1934.....	3.71	8.83	12.54	3.50	8.83	12.33
1933.....	3.62	8.84	12.46	3.49	8.79	12.28
1932.....	3.65	8.92	12.57	3.49	8.90	12.39
1931.....	3.68	8.92	12.60	3.57	8.92	12.49
1930.....	3.67	8.89	12.56	3.56	8.94	12.50
1929.....	3.70	8.87	12.57	3.65	8.84	12.49
1928.....	3.81	8.61	12.42	3.67	8.57	12.24
1927.....	3.75	8.81	12.56	3.81	8.83	12.64
1926.....	3.65	8.80	12.45	3.63	8.81	12.44
1925.....	3.55	8.87	12.42	3.61	8.92	12.53
1924.....	3.61	8.65	12.26	3.65	8.87	12.52
1923.....	3.57	8.90	12.47	3.67	8.96	12.63

Here the disturbing effects of samples below standard have been removed and it is believed that these figures are a better representation of the truth than those in Table 8. The variations in fat percentage are again shown pictorially in Fig. 2.

FIG. 2.

## VARIATIONS IN FAT CONTENT OF "GENUINE MILKS."



It will be seen, in fact, for the years 1923 to 1927 there is now a very close agreement between the figures for farmers' and for dealers' milk and that the gap in subsequent years has been slightly widened, the average for the period being 0.13 per cent. fat as against 0.11 per cent. on the figures in Table 8.

Can any inferences be made even from these revised figures? The position in Salford with regard to the distribution of milk is somewhat unusual and this must now be considered in relation to the milk sampling. Probably half of the milk sold in this city is the product of about four very large firms having their headquarters in Manchester. This means that while the milk they sell can be, and is, systematically sampled by your Inspector he cannot sample the milk they are receiving from farmers. Upon this point it may be remarked, however, that in speaking of large deliveries and over a lengthy period, there appears no reason for supposing that the milk which farmers are sending into Manchester is either any better or any worse than that which similar farmers are sending into Salford.

It is also necessary to point out that figures derived from a system of sampling devised to achieve ends other than a true mathematical average for the milk of Salford must be used with the utmost caution in an argument such as the present. The milk consumption of Salford is estimated at 70,000 pints per day. The average consumption per head of population\* is taken at one-third to two-fifths pints per day, and it is considered probable that in Salford the average is nearer to the lower of these two figures. This, on a population estimated at the middle of 1934 as 213,850, may be taken in round figures to give a daily consumption of 70,000 pints, which corresponds in a year to  $25\frac{1}{2}$  million pints or 3,200,000 gallons. There are in the city about 750 milk dealers. The total number of milk samples examined by this department in the course of a year is usually in the neighbourhood of 1,000. Anyone conversant with the art of sampling will realise that such a number is insignificant to what it would be necessary to take to obtain a true picture of the average quality of the city's milk. Furthermore, since each sample represents a consumption of 3,200 gallons, each dealer should be sampled about once during the period he sells 3,000 gallons, whatever that period may be. Actually, of course, the Sampling Officer attempts to sample the milk of all the dealers regularly and the dealer is his unit rather than any given number of gallons of milk. In other words, the smaller dealers are sampled probably more frequently in relation to their turnover than the larger dealers.

For these and other reasons connected with the bearing of the samples as giving a true average picture no especial significance was attached to the relative change in the figures for farmers' and dealers' milk for several years subsequent to 1928, though they did not go unnoticed. The tendency has persisted for eight years now, and this department, while it is still doubtful as to what significance is to be attached to it and not disposed at the present time to attempt any explanation, will continue to study this aspect of the milk statistics of this city with very considerable interest.

If it be thought that the difference between the fat figures for farmers' and dealers' milk—even if it does genuinely represent some unknown tendency—is too small to worry about, it should be realised that even this small average difference of 0.13 per cent. fat, which is the average discrepancy for the period 1928 to 1935 represents, on the annual milk consumption of Salford, about 7,400 gallons of cream with a wholesale value in the neighbourhood of £4,000.

The following table shows the relative figures for pasteurised and non-pasteurised milk retailed in Salford during the year. The division of samples into pasteurised and non-pasteurised is based upon information supplied by the Sampling Officer.

\* Report of the Re-organisation Commission for Milk pp. 33-35, 1933.  
Ministry of Agriculture Economic Series No. 38. H.M. Stationery Office.



TABLE 10.

AVERAGE COMPOSITION OF PASTEURISED AND NON-PASTEURISED MILK.

Month.	PASTEURISED.			NON-PASTEURISED.		
	Fat.	Solids-not-fat.	Total Solids.	Fat.	Solids-not-fat.	Total Solids.
January	3.52	8.86	12.38	3.86	8.89	12.75
February	3.55	8.83	12.38	3.59	8.89	12.48
March ...	3.53	8.88	12.41	3.67	8.89	12.56
April ...	3.42	8.85	12.27	3.58	8.96	12.54
May ...	3.44	9.03	12.47	3.26	8.73	11.99
June. ...	3.46	8.88	12.34	3.70	8.95	12.65
July ...	3.72	8.83	12.55	3.77	8.89	12.66
August	3.60	8.78	12.38	3.48	8.74	12.22
Sept.	3.82	8.86	12.68	3.90	8.75	12.65
October	3.83	8.93	12.76	4.24	8.84	13.08
Nov. ....	3.77	8.94	12.71	4.05	8.91	12.96
Dec. ....	3.64	8.89	12.53	3.83	8.90	12.73
Total ...	3.61	8.87	12.48	3.79	8.84	12.63

TABLE 11.

ADULTERATED SAMPLES OTHER THEN MILK.

No.	Description.	Nature of Adulteration.	Remarks.	
8931	Butter Toffee .....	No butter fat.	Makers dropped word "butter."	
A100	Black Treacle .....	Contaminated with zinc	See page 21.	
A165	Lard .....	Consisted of lard substitute.	Vendor fined 10s., £1 1s. 0d. costs.	
A171	Lard .....	Consisted of lard substitute.	Vendor fined 10s., £1 1s. 0d. costs.	
A172	Lard .....	Consisted of lard substitute.	Vendor fined 10s., £1 1s. 0d. costs.	
9222	Iodine Ointment .....	Deficient 75% iodine.	Caution.	
9223	Iodine Paint	Methylated.	Deficient 12% iodine.	Caution.
9224	Iodine Paint		Deficient 14% iodine.	Caution.
9225	Iodine Paint		Deficient 40% iodine.	Caution.
9226	White Iodine Cream		Contained no iodine, potassium iodide 2%	Makers ceased manufacture.
9228	Disinfecting Powder ..	Deficient 85% of minimum amount of cresols.	Cresol 1%. Claimed to be made from "full strength Lysol." Manufacture stopped.	
9265	Iodine Ointment.	Deficient 75% iodine	Manufacture ceased.	
9274	Stainless Iodine Solution.	Deficient 77% iodine	Further samples unobtainable in Salford. Facts communicated to Liverpool authorities.	

TABLE 11. *Continued.*

No.	Description.	Nature of Adulteration.	Remarks.
9371	Cheshire Cream Cheese	Consisted of whole milk Cheshire Cheese.	Caution.
9387	Minced (butcher's) Meat	Sulphites 300 pts. per million.	Informal. Formal sample see No. 9396
9396	Minced (butcher's) Meat	Sulphites 400 pts. per million.	Formal. Vendor fined £1.
9368	Lysol Powder .....	Contained less than 0.1% Lysol.	Maker left district. Manufacture apparently stopped.
9252	Soap Powder .....	Soap less than 2% limestone 50%.	Informal. { Makers
9285	Soap Powder .....	Soap less than 2% limestone 50%.	Formal. { ceased
9421	Jam .....	Sulphites 80 pts. per million.	Informal, see 9471.
9471	Jam .....	Sulphites 48 pts. per million.	Formal. Caution.
9525	Butter .....	Water 16.5% .....	Subsequent formal sample contained 15.2% Caution.
9606	New Season Jam .....	Sulphites 76 pts. per million.	Informal, see 9632.
9632		Sulphites 74 pts. per million.	Formal. Prosecution, fined 40s. and £2 2s. 0d. costs.
9568	Lysol Soap .....	No Lysol .....	Informal, see 9665.
9665	Lysol Soap .....	No Lysol .....	Formal.
9700	Iodine Paint .....	Deficient 70% iodine..	Firm interviewed.
9705	New Season Jam .....	Sulphites 54 pts. per million.	No action.
9712	New Season Jam .....	Sulphites 52 pts. per million.	No action.
9713	New Season Jam.....	Sulphites 57 pts. per million.	No action.
9706	Margarine.....	Sold unmarked.....	Prosecution, 21s. costs.
9830	Margarine.....	Label contained unauthorised matter.	Caution.
9870	Lard .....	Consisted of lard substitute.	Caution.
9880	Pork Sausage .....	No pork. Deficient in meat. Preservatives offence.	Informal. See 9932.
9927	Iodine Ointment.....	Deficient 70% iodine ..	Old stock. Remainder destroyed
9932	Pork Sausage .....	Contained beef, deficient in meat. Preservatives offence.	Formal. Caution.
9942	Sausage.....	Deficient in meat .....	Taken on delivery concerning No. 9932
9943	Sausage .....	Deficient in meat .....	
9940	Raisins.....	Contained sugar mites and wild yeast.	Remainder of stock surrendered.
9941	Prunes .....		
9985	Whisky .....	39.5° U.P. 6.9% excess water.	Different vendors, informal samples.
9989	Whisky .....	39.2° U.P. 6.5% excess water.	
			Formal samples genuine. Caution.

### Butter.

Of five samples, one contained moisture slightly in excess of the legal maximum of 16 per cent. The amount in this case was 16.45 per cent., but there is no reason whatever why an already adequate margin should be extended. A formal sample bought the next day was genuine as it contained 15.2 per cent. of water. The vendors were cautioned.

### Margarine.

Two labelling offences were committed with regard to margarine. In the case of sample number 9706 the wrapper was absolutely plain and did not bear the word "margarine" as is required by Section 6 of the Food and Drugs Act. The vendor of this sample was prosecuted, convicted and ordered to pay £1 1s. 0d. costs. In the case of the other sample—number 9830—the label bore this word in type of correct size, but in addition, other matter which is not allowed. In this case the packers were cautioned and the label amended so as to comply with the law.

### Lard.

It is a long time—at least in Salford—since exception has been taken to any sample of lard. Early in the year there was a sharp rise in the price of lard. A number of shopkeepers began to sell as lard the various lard substitutes or cooking fats which, of course, are cheaper. The vendors of all the adulterated samples were prosecuted and convicted. The prosecution asked that these cases should serve mainly as a warning and did not press for a heavy penalty. Each of the vendors had to pay 10s. fine and £1 1s. 0d. costs. A rapidly growing practice was thus stopped.

Later in the year (the price of lard had fallen somewhat by then), a shopkeeper who had been but a fortnight in business also sold a brand of cooking fat as lard. This may have been due to genuine ignorance. The shopkeeper was cautioned and warned that the repetition of the offence would mean prosecution.

### Cheese.

This year, of the 11 samples of cheese, only one has been misdescribed. This was number 9371, ordinary Cheshire cheese, bought from the local branch of a multiple shop. The labelling and advertisements upon the window describing it as "Cheshire Cream Cheese" were the work of the branch manager. Cheshire cheese is, of course, a whole milk cheese and not a cream cheese. The window display with its incorrect description was altered within an hour of the purchase of this sample, and a letter of caution to the firm's area office was considered to be sufficient action.

### Treacle.

Sample number A 100 contained 400 parts per million of zinc. The vendors surrendered the remainder of their stock to this department, when a further examination was made. Five further tins were examined and the amounts of

zinc found—varying from 18 to 35 parts per million—might be taken as reasonable when it is remembered that one pound of molasses remains from the repeated crystallisation of 20 pounds of material derived from the sugar cane. Subsequent repeat examinations of the amounts of zinc found in the first tin showed that the greatest concentration of zinc had been at the top of the tin. The figures obtained were 640, 425, 355 and 170 parts per million, representing four successive determinations, including the first. (Although the sample had been stirred before analysis the circular stirring of a substance like treacle might well result in an impurity present chiefly at the top not being evenly distributed). Stirring was deliberately avoided before the subsequent analyses.

The most reasonable hypothesis to account for the observed facts is that accidental contamination from external sources had taken place in the case of the original sample, A 100. No objectionable amount having been found in those of the remaining tins examined, what remained of the consignment was returned to the vendors. The makers of the molasses, who had been considerably perturbed by the occurrence of zinc in the first tin, acted throughout in a most straightforward and courteous manner and placed all information and facilities at the disposal of this department. It is probable that they were in no way responsible for the presence of the impurity in the first tin—the fact of which they confirmed in their own laboratories—and it is not considered that zinc is a likely impurity to recur in treacle in the ordinary course. Its presence in this case was first detected in employing the ferrocyanide test for copper.

### **Jam.**

Twenty-one samples were examined and of these seven were considered unsatisfactory.

SAMPLES NUMBERS 9421 AND 9471. The first of these, bought informally, contained 80 parts per million of sulphite preservative, which is exactly double the maximum amount allowed by the Preservatives Regulations. No legal action is possible on an informal sample and consequently Number 9471 was bought formally. Here the amount was considerably less, 48 parts per million in fact. Though this is still in excess of the legal maximum, eight parts per million is rather a small margin on which to prosecute and the firm in question was warned by letter.

SAMPLES NUMBERS 9606 AND 9632. These again were informal and formal samples of one brand and contained respectively 76 and 74 parts per million of sulphite preservative. The jam was blackcurrant and labelled "New Season." What (if anything) are these words to be taken to mean? Presumably they are designed to catch the eye of the purchaser and consequently it is fair to enquire what he thinks of them. When asked—as numbers have been by your Inspector—the reply is vague and generally to the effect: "Oh! I suppose it means it's fresh." Is jam of this type what the average purchaser thinks it is? The



issue on jam is a complicated one and cannot be explained in a few words. It is of sufficient importance to justify, in this place, an attempt to describe the position.

The crux of the whole question lies in the shortness of the fresh fruit season. So that unless the jam maker can find some way round it, his manufacturing activities must be limited to five months in the summer and autumn, and for more than half the year he will have his plant idle and his workpeople unemployed, (except possibly for marmalade and apricot jam). So far then our sympathies are with him and especially so in these days of labour difficulties. The jam makers' way round is not to make his fruit into jam during the brief season while it is fresh, but to have it put down for him with preservative. The preservative used is called "sulphite" and usually consists of acid sulphites of lime or soda. The fruit, when in sulphite pickle, is allowed to contain 0.2 per cent. of sulphites (expressed as sulphur dioxide), and in the case of raspberries and strawberries the maximum amount is increased to 0.3 per cent. In fairness to the jam maker and to the present position, it should be pointed out that these amounts are not large and that in the process of jam making the sulphites are largely removed (so much so that in place of the 2,000 or 3,000 parts in the pickled fruit the law allows but a maximum of 40 parts in the finished jam). It is also right to state that jam so treated is, in the light of present scientific knowledge, equally nutritious and harmless to health.

Nevertheless, sulphites are strong chemical agents and even in such small amounts their action upon the fruit is so drastic as to destroy partly or wholly the natural colouring of the fruit and also seriously to impair its setting qualities—the so-called gelling power which causes the boiled jam, containing sugar and natural acids, to set upon cooling. Therefore, the jam maker, when using pulp, has to restore the fruit colour with artificial dyes and to add "pectin." Pectin is the chemical constituent of fruits responsible for the setting, and commercial pectin is made from apple pressings, from the rinds, pulp and albeds of citrous fruits, and from some vegetables. The jam maker may also add citric, tartaric and other acids to increase the natural acidity of the fruit: this also assists in the setting. Now all these things may be harmless enough, the fact remains that jam so made is not as nice—at least in the writer's opinion—as jam made in the home, or, for that matter, in the factory from fresh fruit and according to the time honoured recipe. Add to this the fact that the minimum percentage of fruit required by the present unofficial standards\* is low, varying from 30 per cent. to 45 per cent. according to type for "Full Fruit Standard" jams, and it will be seen that under present conditions the jam maker is allowed to use a label suggesting first quality and with no mention of any or all the above mentioned additions he may have made, for an article which can be described without any fear of contradiction as of second quality only. Not content with this remarkable degree of latitude we find in the case of the present samples the label "New Season" in addition.

\* Agreed between the Food Manufacturers' Federation and the Society of Public Analysts.



The jam maker says this means—made from this season's pulp. Pulp is largely imported from Holland and France, and it is a matter of some doubt whether the maker knows in every case whether the fruit is or is not this year's or of some older and less certain vintage. Furthermore, even but a few days consorting with such a drastic chemical as acid sulphites and even in the admittedly small amounts permitted, is sufficient to destroy any quality of freshness the fruit ever had. And it is a matter of but little doubt that the average purchaser is not so well informed as to realise that the grandly sounding New Season's Full Fruit Standard jam he buys may, for example, in the case of blackcurrant jam, contain but 30 per cent. of fruit and that fruit entirely pulp, stiffened up with added pectin, its colour restored with artificial dyes and its acidity artificially increased. If the purchaser knew all these things he would have a very obvious way of showing the jam maker whether or not he approved of them. Even the scientist must be guarded in expressing an opinion. The discoveries in the field of vitamins modified our views as to how fruit and vegetables should be prepared and eaten, and there is no guarantee that the chemist has at the present time a full or even adequate knowledge of such natural products.

Admittedly there are difficulties confronting the jam manufacturer. He should not regard the present methods as a solution of them. Fruit may be preserved for jam making in other and less drastic ways, as for instance, in syrup, by cold and by part boiling with a lesser amount of sugar. The jam trade has a Research Association and it is to be hoped that this Association will tackle the problem. In the meanwhile the pulp question should be regarded only as a temporary expedient, just as we have at the present time to put up with pasteurised milk until enough producers can produce at a reasonable cost milk so free from infection that it need not be partly cooked to render it safe to drink. In any case the jam maker should not expect this attempted solution of his difficulties to be accorded the same labels as the time honoured product.

After this somewhat lengthy digression, we may return to the two samples Numbers 9606 and 9632. As has been stated, the law allows a maximum of 40 parts per million of sulphites in the finished jam. The first sample contained 76 and the second 74 parts per million, and each bore the "new season" label. For reasons, which it is hoped will be obvious from the foregoing account, it was not thought that an attempt by the prosecution to rely upon the "new season" label would meet with any success in the Courts. These jams, however, transgressed the Preservatives Regulations, and in taking a case on Number 9632 under these Regulations, it was hoped to bring before the Court something of the matter at issue. The defence produced two analysts to state that the sample contained but 36 parts per million, and the Court thereupon ordered the third portion to be sent to the Government Chemist who found 66 parts per million. In spite of the fact that the Court recorded a conviction, fining the makers 40s. and £2 2s. 0d. costs, there was but little doubt that the offence was regarded as chiefly of a technical nature, and for this reason no action was taken with regard to samples Numbers 9705, 9712 and 9713 which fell in a similar category.

### Toffee.

SAMPLE NUMBER 8938, BUTTER TOFFEE. The amount of fat in this sample (0.5 per cent.) was so small that it was not possible to obtain enough from the sample to determine its composition. This did not appear to matter much however, since even if all the fat were butter it was considered that a material and much larger percentage would need to be present to justify the description. The makers were interviewed and agreed to cease the use of the word "butter" in connection with this article.

### Minced Meat.

An informal sample (Number 9387) of minced butcher's meat contained 300 parts per million of sulphites. A subsequent formal sample (Number 9396) bought from the same shop contained 400 parts per million and the vendor was fined £1. This case was taken as a warning to butchers in the district and the prosecution expressly asked that the penalty should not be heavy. There is some possibility of confusion in the minds of butchers over this particular part of the Preservatives Regulations. They should realise that sausage and sausage meat containing raw meat, cereals and condiments may be preserved with sulphites providing the amount does not exceed 450 parts per million, and also provided they are labelled as preserved, or a notice to this effect prominently displayed in the shop, but that minced meat must not contain preservative of any kind.

### Sausage.

One informal and three formal samples of sausage were unsatisfactory. Number 9880 was an informal sample bought as pork sausage and was unsatisfactory in three respects.

- (a) It contained sulphite preservative (70 parts per million) which were not declared either on the label or by notice in the shop.
- (b) It was a beef and not a pork sausage.
- (c) It contained but 38 per cent. of meat. The remainder consisted of 37 per cent. of bread and 25 per cent. of added water.

Regarding (a) there would have been no offence if a notice had been displayed in the shop to the effect that the sausage sold contained preservative. (b) and (c) are more serious. To sell beef sausage as pork is a fraud—the latter are at least 2d. per pound dearer. The question of meat deficiency involves a standard. There is no official standard, but in any given case a Court can always fix one after hearing evidence. Fifty per cent. of meat is the commonly accepted minimum by Public Analysts and reputable trade practice conforms to this.

The sausage was sold by a retail butcher who buys them from a sausage maker. The Sampling Officer made enquiries from which it appeared that the retail butcher was responsible for the first two offences and the maker, of course, for the low meat content. Number 9932 was subsequently purchased formally from the retailer. It contained 31 per cent. of meat, but in this case there was some pork, probably about 15 per cent. of the total meat, but owing to difficulties of analysis, this amount would have to be certified as 25 or even 30 per cent. On the formal sample, therefore, the department had a weaker case against the vendor, who was cautioned by the Medical Officer of Health.

Numbers 9942 and 9943 were taken on delivery from the maker and contained 37 and 42 per cent. of meat respectively. He was also cautioned by the Medical Officer of Health and informed that this department held 50 per cent. of meat to be a minimum standard.

### **Dried Fruit.**

A sample of raisins and a sample of prunes were condemned. They were bought at the same shop and both looked very nasty; the average purchaser would probably have called them "mouldy." Microscopic examination revealed the presence of wild yeast (a mould) and sugar mites, both living and dead. The shop surrendered the remainder of the stock to the Inspector.

### **Whisky.**

SAMPLES NUMBERS 9985 AND 9989. These samples, obtained from different public houses, were below the legal strength, which is 35 degrees under proof. Number 9985 was 39.5 degrees U.P., equivalent to 6.9 per cent. excess water. Number 9989 was 39.2 degrees U.P., equivalent to 6.5 per cent. excess water.

Formal samples were genuine in each case. The vendors were cautioned.

### **DRUGS, etc.**

In recent years in this city a relatively higher percentage of the samples of drugs than of foods have been certified as adulterated or unsatisfactory. This implies no reflection on the care or honesty of the regular members of the drug trade, including manufacturing, wholesale or retail chemists. There has been much evidence of the activities of what, for want of a better name, must be called the cheap drug trade selling such articles as lysol or iodine preparations, chiefly in markets or by hawking from door to door, and a large number of the samples to which objection has been taken in recent years have been the products of this type of trade.

### Iodine Preparations.

These articles are conveniently grouped together. They include ointments of various kinds and variants on the solution of iodine which is still probably better known by the older name of tincture of iodine.

SAMPLE NUMBERS 9222 AND 9265, IODINE OINTMENT ; SAMPLE NUMBERS 9223, 9224 AND 9225, IODINE PAINT ; SAMPLE NUMBER 9226, WHITE IODINE CREAM ; SAMPLE NUMBER 9274, STAINLESS IODINE.

This department became interested in these samples following upon the "iodine" cases reported in 1934. In fact, since these cases, several firms have re-christened their products ; what was formerly "iodine" or "solution of iodine" has become "iodine paint" without any change in composition.

After the prosecutions referred to, the firms involved and several others engaged in the same type of business approached this department regarding the composition and descriptions of these preparations. The attitude adopted in dealing with them may be summarised as follows :—An article described as solution of iodine or tincture of iodine must conform in composition to the *Liq. Iod. Mitis.* of the British Pharmacopœia, 1932, as also must "iodine" (which is what these preparations are known as by the average purchaser). At the same time there appears to be no reason why a cheaper product should not be available to the public and such a product can be made by replacing the alcohol of the Pharmacopœia by industrial methylated spirit ; such products cannot, of course, be called by the name or synonyms of the Pharmacopœia. On several occasions this department was asked what name it would approve for such an article and Iodine Paint (Methylated) was suggested. On the question of a standard for this, a minimum of 2.5 per cent. iodine would have been adopted but for the existence of the Home Office recommendation of 2.0 per cent. of iodine (in alcohol) for first aid boxes in factories and workshops. Under the circumstances, therefore, it was felt that a minimum standard of more than 2.0 per cent. could hardly be adopted, and consequently, as a working basis, 2.0 per cent. of iodine in industrial methylated spirit of reasonable strength has been taken as a minimum requirement. Several firms of repute have marketed iodine paint (methylated) for some time past and before these "iodine" cases were heard—all such products which have been examined here are equal to or better than this standard.

It will be noted that in the table below two samples are reported against though containing more than 2.0 per cent. of iodine ; in each case the label claimed a percentage of iodine equal to *Liq. Iod. Mitis.*

No difficulty exists over a standard for iodine ointment since there is the well-known *Ung. Iodi.* of the British Pharmacopœia, 1914, now incorporated in the British Pharmaceutical Codex. Similarly, with decolourised solution of iodine, there is a British Pharmaceutical Codex formula requiring 2.86 per cent. total iodine. The following table gives in condensed form particulars and action taken regarding these various samples :—

TABLE 12.

No.	Description.	Iodine.		Remarks.	Action.
		%	Deficiency %		
9222	Iodine Ointment	1	75		Caution. Makers' formula should produce 4%. Possibly inadequate mixing.
9223	Iodine Paint (Methylated).	2.2	10	Claimed iodine content — Liq. Iod. Mitis.	Caution.
9224	Iodine Paint (Methylated).	2.1	14	Claimed iodine content — Liq. Iod. Mitis.	Caution. Makers will increase amount of iodine to guard against possible loss in making, etc.
9225	Iodine Paint (Methylated).	1.2	40		Caution.
9226	White Iodine Cream.	—	?	Formula (on label) KI 2%, Meth. Sal. 1½%.	Makers cease manufacture for the present. Will consider including iodine in formula or renaming product.
9265	Iodine Ointment	1	75		Makers have ceased manufacture of this product.
9274	Stainless Iodine Solution.	0.65	77		Further sample unobtainable in Salford. Facts communicated to Liverpool authorities. (Manufacturers believed to be in Liverpool).
9700	Iodine Paint	0.6	70	Previously on sale as Solution of Iodine	Firm interviewed. Agreed to increase iodine to 2%.
9927	Iodine Ointment	1.0	75	Old stock	Manufacture ceased.

**Lysol Powder.**

SAMPLE NUMBER 9368. This contained less than 0.1 per cent. Lysol. The maker of this sample has left the district and the manufacture has stopped.

**Disinfectant Powder.**

SAMPLE NUMBER 9228. This article, called "Lysolute," claimed, according to its carton, to contain "full strength genuine Lysol," and the package also bore the legend "Beware of worthless Lysol imitations." The amount of Lysol was 2 per cent. with a solid diluent which appeared to be mainly spent lime. After an interview, this department has received a written undertaking from the makers that they will cease its manufacture.



**Lysol Soap.**

A number of samples of Lysol soap was examined last year when the conclusion was reached that an article so labelled should contain a minimum of 2 per cent. of Lysol in order to justify the name. At the same time a difficulty was felt about the legal means whereby any such standard could be enforced. Lysol soap is certainly not a food and it is at least doubtful if it could be called a drug within the meaning of the Food and Drugs Act. An informal sample of Lysol soap (Number 9578) was examined, and as it contained no Lysol whatever, a formal sample of the same make (Number 9665) was bought and analysed with the same result. In the hearing of this case, which was taken under the Merchandise Marks Act against the maker, it was suggested that there was a small amount of Lysol present. The Magistrate held he had no power to fix a standard under the Merchandise Marks Act and dismissed the case, awarding costs against the Corporation. An appeal to the Divisional Court against this decision is pending.

**Soap Powder.**

SAMPLE NUMBERS 9252 AND 9285. These two samples were informal and formal purchases of the same brand. Each contained between 1.5 and 2 per cent. of soap and not less than 50 per cent. of limestone. The latter may be regarded as an absolute adulterant. In view of the composition of this sample action was contemplated under the Merchandise Marks Act in the public interest. However, upon the makers becoming aware of the purchase of the formal sample they informed the Inspector that the product would not be made in future. A letter was received to this effect.

**Miscellaneous Samples.**

Contract Samples. . . . .	284
Miscellaneous Health Department.....	26
Private Individuals and Firms.....	7
Police .....	14
City Engineer.....	2
Own information, etc. ....	30
Soot Gauges .....	46
Sulphur Dioxide (Lead Peroxide method).....	18
	<hr/>
	427
Sulphur Dioxide (Volumetric method, daily tests)	255
Sunlight Tests.....	1,470
	<hr/>
	2,152

**Contract Samples.**

Milk .....	33
Bread .....	32
Currant Bread.....	10
Cake .....	9
Soap—Pale .....	8
White Windsor .....	6
Carbolic .....	7
Soft .....	6
Liquid .....	35
Flakes .....	3
Powder .....	3
Scouring Stones.....	2
Scouring Powder .....	8
Metal Polish .....	11
Metal Paste .....	7
Turpentine Substitute .....	3
Sweeping Compound .....	5
Jam and Marmalade .....	59
Cocoa .....	3
Mustard .....	8
Margarine .....	8
Jelly .....	3
Custard Powder .....	4
Malt Vinegar .....	4
Sausage .....	2
Cod Liver Oil Emulsion .....	1
Auramine Solution .....	1
Calamine Lotion .....	1

The year under review has seen a considerable increase in the number of samples received in connection with Corporation contracts. In October the Purchasing Committee passed the following resolution :—

“ That it be a general instruction to the Medical Officer of Health,  
 “ in all cases of commodities suitable for the purpose, to have specifications  
 “ prepared by the City Analyst.”

In this connection it is felt that some observations on the question of Corporation contracts with special reference to specifications may be of some interest in this place. During 1935 the Departmental Committee (of the Ministry

of Health) on the Standardisation and Simplification of the Requirements of Local Authorities issued its second Report\* and the following quotations from this report are selected :—

“ Purchases should be made according to specification and not by  
“ trade name. We have already emphasised the necessity of establishing  
“ for each requirement a standard or standards representing the quality,  
“ grade and size best suited for general use. In addition to the British  
“ Standard Specifications with which Local Authorities are familiar there  
“ are the specifications of the Government Departments, prepared by the  
“ Inter-Departmental Technical Co-ordinating Committees, on general  
“ stores and textiles which are published by H.M. Stationery Office. These  
“ include hides and leather, brooms and brushes, saws, shovels, cooking  
“ utensils, soap, gymnastic apparatus, cutlery, mops, linoleum, cloths and  
“ serges, shirtings, socks, underwear, blankets and other bedding, dusters,  
“ towels, boots and shoes, and other articles which Local Authorities no  
“ less than the Government require. . . . Specification by reference to  
“ trade names or proprietary brand names is unsatisfactory since such  
“ names do not adequately define the commodity. A proprietary brand  
“ name doubtless insures a reasonable standard of quality since the  
“ reputation of the brand name must be protected. But even if it be  
“ known with certainty that the brand name is applied only to one  
“ product of constant and uniform quality, the specification of that  
“ product defeats the objects of bulk purchase: firstly (and obviously)  
“ because it restricts competition to the producers and factors of that  
“ product, and secondly, because the producer is often bound by agree-  
“ ments with his regular customers not to sell below a fixed price which is  
“ determined to some extent by the demand he has created for it, expendi-  
“ ture on advertising and other factors which have only an indirect connection  
“ with the quality or intrinsic value of the product.

“ This point is of particular importance in regard to foodstuffs and  
“ other household necessities. When bought for a private household, or  
“ even for a commercial undertaking which may buy in bulk on a large  
“ scale (such as a hotel or steamship company), a brand or brands will be  
“ ordered because the family prefer its flavour, or (as the case may be)  
“ because it has proved or is expected to be most acceptable to customers.  
“ The food value is not, at least consciously, the primary consideration.  
“ With the buyer for a public institution the position is reversed: naturally  
“ he wants palatability for the sake of the inmates, but more than palatability  
“ he wants food value. If he buys from specification after tender he fixes  
“ his own standard of food value and gets it at a competitive price. If he  
“ buys from proprietary brand name he does not know what food value he  
“ is buying, and, even if he ascertains it later, he is not aware whether  
“ equal food value can be bought more advantageously from some other  
“ producer. . . . Some Local Authorities have equipped their own  
“ laboratories for testing and comparing deliveries with the standard samples

\* H.M. Stationery Office, 1935. Price 6d.

“ or specifications. Analytical tests are made of papers, paints, oils, coal  
 “ and certain foodstuffs. Many make their own tests of cement, asphalt  
 “ and the like. Fabrics are sent to the official testing houses at Manchester,  
 “ Bradford or Belfast. Iron, steel, cement and similar materials are sent  
 “ to the National Physical Laboratory or to recognised trade testing houses.  
 “ Furniture, electric cables, steel tyres and the like are inspected at the  
 “ contractors' works during the course of manufacture.

“ We have been impressed by the evidence of the results of such  
 “ systematic testing, and if it can be brought under one control the risk  
 “ that goods rejected at one point may be tendered at another is avoided.  
 “ . . . . Indeed, we feel entitled to say that, notwithstanding that it is  
 “ derived from widely different sources, the evidence we have adduced is  
 “ so consistent that our conclusions are almost irresistible. Briefly, those  
 “ conclusions are :—

- “ (1) that bulk purchase, if it is accompanied by standardisation and  
 “ simplification, enables better goods to be bought for less money ;
- “ (2) that bulk purchase cannot be operated with maximum success  
 “ unless the requirements of the buying unit are large enough (a)  
 “ to command large-scale buyer's terms ; and (b) to employ  
 “ experienced staff ;
- “ (3) that Local Authorities might with advantage co-ordinate their  
 “ requirements and/or combine with other Local Authorities and  
 “ so create a buying unit of appropriate size. . . . ;
- “ (7) that in every case in which a Local Authority has co-ordinated  
 “ its buying arrangements or co-operated with other Authorities  
 “ for purposes of buying, the arrangements have endured, and  
 “ have, indeed, been extended in scope.”

The propositions advanced in this report are, to a large extent, self-evident truths, though none the less valuable for this reason, and the following additional observations are based upon the experience of this department.

While it is evident that analysis cannot be extended to every article which a large Corporation buys, there are many where it gives valuable information as to qualities ; complete analysis is usually not necessary : in general, examination will be directed to finding whether necessary amounts of valuable ingredients are present and also to seeing that harmful or injurious ingredients are absent or do not exceed a certain amount. This outlook will be reflected in the specification. As an example the existing specification for carbolic soap may be quoted :—

“ Soap, Carbolic. To contain at least 63 per cent. of Fatty and  
 “ Resin Acids, of which not more than one-third shall be Resin Acids.  
 “ To contain not less than 3 per cent. Cresylic Acid. Free Alkali (calculated  
 “ as  $\text{Na}_2\text{O}$ ) not to exceed 0.1 per cent. The soap must be hard when  
 “ delivered.”



It may be noted that these requirements are both positive and negative. The soap must contain a minimum amount of fatty acids and cresylic (carbolic) acids, and must not contain resin acids or free alkali above the stated amounts. The first is a standard of quality and the second aims at the exclusion of deleterious, cheap or unwanted materials. This is a common type of specification. That this is the only satisfactory and scientific way of buying materials for a desired purpose should be obvious. The requirements of the buyer are precisely stated and the person tendering should know or can find out whether his product complies with them. If an article proves unsatisfactory in use it will usually be found to be due to a departure from the specification, and in such a case the buyer has a specific complaint and an obvious remedy in place of the usual somewhat vague objection that the article is "unsatisfactory." Thus it will be seen that by the use of specifications based upon analysis the element of chance is removed to a large extent. As a result of experience, a good analytical specification can generally be drawn up, and thus the Corporation can say with confidence, before buying, that an article complying with it will prove satisfactory for the given purpose. It may, of course, happen that articles bought for a new or special purpose prove unsatisfactory through no fault of the seller or purchaser, and in such a case, an analysis followed by consideration of the questions involved may lead to the problem being cleared up and an understanding of the special requirements which can be embodied in a specification obviating further trouble.

Specifications embodying analytical requirements lend a degree of precision and definition to the statements of the requirements of the Corporation which no other method can. This may be seen with regard to another aspect to Corporation buying which may have particular force in such a city as Salford. Many large buyers require the best quality only, and, in some, perhaps many, cases this may be proved to be the best and cheapest policy in the end. Where economy is essential, the responsible Committee may, however, decide that while it would like the best quality, it must be satisfied with less, provided the article is reasonably good and likely to prove satisfactory in use. To give effect to such a decision must, in the absence of an analytical specification, be a matter of pure chance. By means of such a specification, however, it may be possible to give precise definition to a desire of this kind though, of course, instances may still arise where this cannot be done. In the writer's view the broad question of the quality of the particular article to be bought should, in important cases at least, be a matter of policy to be decided by the appropriate Committee, if necessary upon the advice of its expert staff, and the embodiment of this policy in precise terms is the work of the department concerned with specifications.

Specifications are, in general, drawn up as a result of the experience of the department using the materials in question. The City Analyst is able to advise upon the chemical and analytical side, and, there are, in certain cases, model specifications such as those of the British Pharmacopœia and the British Pharmaceutical Codex for drugs, and the British Standards Institution's specifications dealing chiefly with materials used by engineers, which may serve as useful guides.



Cases are also not unknown in which a contractor, having obtained an order upon a submitted sample, the materials delivered (particularly if delivery takes place over a period) prove inferior to the original sample. Systematic sampling of deliveries is considered essential and this is done by the Sampling Officer who has the considerable skill and experience which is necessary for the correct sampling of large bulks of widely differing materials. Sampling, of course, takes place without notice to the contractor. Such sampling also keeps the Analytical Department in touch with the users and in a position to be aware of and investigate complaints from that end. This department does not regard a specification once drafted as unalterable; its aim is to ensure that materials are satisfactory for their purpose and a well-founded complaint may result in an alteration and improvement of an existing specification.

Finally, it is almost certain that by employment of such methods, savings can be effected. During the current year the introduction of a specification for one particular type of soap has resulted in a saving of £110 over the previous year. As experience accumulates it should also be found that the requirements of the various departments and sub-departments using similar articles can be co-ordinated and simplified with resulting advantages from buying larger bulk. In the city Laboratories the Corporation has to its hand a tool already equipped for this kind of work which can be performed there at a cost which should, therefore, amount only to that of the time and materials involved.

Specifications are already in existence for soap (seven types) and cleansing materials, milk, cocoa, meat extract, vinegar, jams and certain drugs, and the following articles are at present under consideration with a view to the issue of specifications:—sausage, margarine, custard powder, flour, mustard, metal polish, scouring and sweeping compounds. It will be seen that up to the present the articles dealt with are chiefly of the type of hospital stores, etc., purchased for the Health Committee. There would appear to be a possibility of enlarging the scope of this work with advantage to the Corporation.

#### **Rag Flock Act.**

Two samples were examined. Both complied with the statutory limit of 30 parts of chlorides per 100,000.

#### **Fertilisers and Feeding Stuffs Act.**

Four feeding stuffs have been examined, of which two conformed with the analysis on the invoice, one was unsatisfactory (52.5 per cent. albuminoids in place of 65.6 per cent. declared) and one had no guarantee.

Of the two fertilisers, one was in accordance with the analysis and one was unsatisfactory.

#### **Merchandise Marks Act, 1926.**

##### **Imported Goods, Marking Orders.**

Seventy-five shopkeepers have been cautioned during the year for various infringements of these Orders. No shopkeepers have been proceeded against.

#### **Measurement of Solar Radiation.**

Since this is the last report which the writer will present upon this subject an attempt will be made to give a brief summary of the work in hand, and an indication of some of its problems and implications.

The principal purpose of such measurements as these, especially in such a city as Salford, would seem to be to determine if possible what is the nature and extent of the loss suffered owing to a comparatively highly polluted atmosphere.

The sun provides a source of radiation of heat, of light and of ultra-violet light. The earth's atmosphere contains both moisture and some natural dust, each of which absorbs or scatters these radiations in varying degree. In addition, the atmosphere of such a city as Salford contains much man-made filth, especially smoke, and it would be interesting to know how this further affects such solar radiations as we might otherwise receive. Is the effect great or small? Does it equally affect light, heat and ultra-violet light?

At this stage it is proposed to consider only such aspects of the smoke problem as affect our loss of these solar radiations. In the Annual Report for 1932 it was indicated that the monetary losses of all kinds which could be attributed to our polluted atmosphere could be assessed at a quarter of a million pounds sterling per annum for this city, or 24s. per year for every man, woman and child within its boundaries. These losses included extra light bills, extra laundry, lost time, damage to buildings and other similar items.

Obviously, before we can estimate loss in radiation, which is the limited aspect of the whole problem of atmospheric pollution now to be considered, we must have some reasonably accurate means of measurement. Available means may be classed as of two kinds :—

1. **PHYSICAL.** Here the radiation is transformed into electrical energy which is suitably recorded. Such methods are somewhat involved, the apparatus is not cheap, but results can be obtained of considerable exactitude.

2. **PHOTOCHEMICAL.** Here the light is made to act upon chemical substances usually in solution and the effect is measured by chemical methods. Such methods vary but are, in general, considerably less involved than the physical methods and very often they can be carried out without expensive apparatus. Unfortunately, the results yielded are approximate only. Unless care is taken they may indeed be worthless : at their best they can be of material value. Photochemical methods include photographic ones, and, broadly speaking, the same remarks apply to the latter.

Owing to expense, the work hitherto carried out here has relied solely upon photochemical methods, but it is hoped that it may be found possible shortly to begin observations using radiometers. In 1929, when the writer came to these laboratories, the method used was the potassium iodide. These observations are still continued. In addition a lengthy trial has been given to the acetone-methylene-blue method which has been discarded as not sufficiently sensitive. Trials have also been given to the early and experimental form of Dr. Ashworth's photographic recorder for ultra-violet light (see Annual Report for 1932), and his latest instrument is now receiving trial. In September of this year a series of observations were begun using Morton and Gillam's solution which have been continued up to the time of writing (April, 1936) and will be discussed later. Arrangements are also being made to test Anderson and Robinson's oxalic acid method.

All these methods, with the possible exception of the potassium iodide, claim to measure ultra-violet light. It will be instructive to compare, for instance, the results obtained by Anderson and Robinson's method with those already available for other places in roughly similar latitudes. It would also be most interesting to know if any antirachitic\* ultra-violet light is received in Salford during the winter: this is indeed a question of considerable importance to the people living in Salford, but its answer requires expensive apparatus. A recent report of the Rowett Institute (Food, Health and Income) suggests that a deficiency of vitamin is likely to occur in the diet of most families where the weekly income per head is £2 or less. As is now widely known, rickets is a disease due to lack of vitamin D, and though the report in question does not deal specifically with vitamin D, it is tolerably certain that the normal diet of many families in this city contains insufficient vitamin D. The human body can overcome this deficiency if it receives enough of the extremely short wave antirachitic ultra-violet light, but if this is also lacking, the vital importance of the work of the Child Welfare clinic in its ultra-violet light treatment and provision of cod liver oil for children, becomes at once obvious.

#### THE POTASSIUM IODIDE METHOD.

This process has been used continuously for a number of years at three stations in Salford and at the Corporation's sanatorium at Nab Top, Marple. Whatever particular parts of the total solar radiation are responsible for the results obtained in this test, it does show a very striking loss of "light" in the city, compared with nearby places in less polluted areas. The figures for 1935 are given in Table 13.

**TABLE 13.**  
MEASUREMENT OF DAYLIGHT.

Month, 1935.	Regent Road.	Nab Top Sanatorium, Marple.	Ladywell Sanatorium.	Drinkwater Park.
January.....	25.9	82.5	72.7	72.2
February.....	40.2	109.5	72.0	83.8
March.....	73.9	180.4	136.4	101.0
April.....	110.6	210.4	174.0	168.5
May.....	218.5	317.3	190.6	247.1
June.....	210.5	241.0	230.3	238.6
July.....	250.7	345.8	317.3	274.5
August.....	234.3	362.7	321.3	277.9
September.....	154.8	214.2	177.8	188.6
October.....	143.0	176.8	170.0	159.6
November.....	130.4	152.9	111.6	89.8
December.....	57.4	100.1	77.1	64.0
Yearly Totals.				
1935.....	1650.2	2493.6	2051.1	1965.6
1934.....	1743.2	2323.4	2162.2	2070.6
1933.....	1627.6	2311.7	2073.8	1953.1
1932.....	1796.7	2123.6	1958.6	1819.1
1931.....	1450.6	2084.5	1714.5	1751.5
Yearly average for five years.....				
.....	1653.7	2267.4	1992.0	1912.0
Comparative percentage figures.....	72.9	100.0	87.8	84.3
Loss against Nab Top Sanatorium.....	27.1	—	12.2	15.7

\* Antirachitic ultra violet light has a wavelength of 313  $M_{\mu}$  or shorter. 1  $M_{\mu}$  is one millionth of a millimetre. The visible light from the sun covers the range 100-750  $M_{\mu}$ : ultra-violet light is normally from 400-300  $M_{\mu}$ . Antirachitic ultra-violet light will prevent rickets.

The results are expressed as milligrammes of iodine obtained by an exposure from 9 a.m. to 9 a.m. The following account and criticism of this method are based upon an extended experience.

This photochemical method depending upon the liberation of iodine from an acidified solution of potassium iodide has usually been performed as follows<sup>1</sup>:—

Solutions—Potassium iodide A.R. 20 gms. per litre.

Sulphuric acid A.R. N/4 approximate (6.7 ml. concentrated sulphuric acid to 1 litre).

Sodium Thiosulphate 1.955 gms. to 1 litre (1 ml. = 1 milligramme iodine).

Starch indicator solution.

Ten ml. of the potassium iodide and 10 ml. of the sulphuric acid solutions are pipetted into a two-ounce stoppered glass bottle, the solutions mixed and the bottle stoppered and exposed on a six-inch white tile in an open position. After 24 hours exposure the contents are titrated with the thiosulphate solution to starch; a blank is kept in the dark at as nearly as possible the same temperature and titrated at the same time. The difference is regarded as iodine liberated by solar radiation, and the result is expressed as milligrammes of iodine. If any delay is likely to occur between the end of the exposure period and the titration, the bottle may be kept meanwhile in a small closed tin. Such tins can be used for observations at outlying stations, *e.g.*, by sending eight numbered tins with a bottle in each every week, one being exposed each day and then replaced in the tin, the eighth, which is kept in the dark the whole time serving as a blank: at the end of the week the eight bottles in their tins are returned to the laboratory for titration.

The method as described has been used by a number of observers, and in order that future results may be roughly comparable, it is recommended that the details given should be adhered to. It is obvious that the dimensions of the bottles will affect the results and it is suggested that two-ounce, narrow-mouthed, stoppered reagent bottles of white glass should be employed, in which the height of the 20 ml. of solution for exposure is 22 to 25 mm. Interference effects from the stopper<sup>2</sup> and effects of varying thicknesses of the glass of the bottle are probably not serious. The reagents used should be of A.R. quality. This applies especially to the potassium iodide<sup>3</sup>. The mixed solutions before exposure must be "water white," any showing even the slightest visible yellow tinge should be rejected. The thiosulphate should be freshly prepared at frequent intervals, and in case of doubt rejected or checked. The reasons for most of these precautions will be apparent from what follows.

The reaction employed in this test is the photochemical oxidation of HI, and this reaction is sensitised by  $I_3$  ions<sup>1</sup>. It is perhaps not generally realised that the oxygen in the bottle above the solution is a reagent equally with the



acid and the potassium iodide—the reaction will not proceed in bottles in which the air has been replaced by nitrogen. The system is affected to a changing degree by a number of conditions. For instance, the solution at the commencement is colourless; there is, therefore, no absorption in (and no reaction due to) visible radiations. As soon as iodine is liberated the solution becomes increasingly yellow and finally brown due to absorption in the blue part of the spectrum. Thus the radiations responsible for starting the reaction must be in the ultra-violet (or infra red; but this latter is not probable), and as the iodine is liberated the solution becomes reactive to light in the visible as well. While the coloured solution is still reactive to ultra-violet, the main effect is due to visible light, chiefly blue light. That this is so may be proved roughly by exposing the solution in a tube of Chance "ultra-violet glass" transmitting only between 300 and 400 mm. with 50 per cent. or more transmission at 335 to 380 mm., when the amount of iodine liberated by the ultra-violet part of the solar radiation is very small compared with that obtained by the usual test.

As the colour of the solution deepens, its sensitivity diminishes—in simple language, it becomes more opaque (Moss and Knapp loc cit). This may readily be proved by exposing a bottle containing say 5 milligrammes of iodine along with the ordinary test. At the end of 24 hours exposure it will be found that there is less than 5 milligrammes of iodine difference between the two bottles; that is to say, the iodine liberated by the sunlight in the second bottle is less than that in the usual test. If the initial amount of iodine in the second bottle be increased to 10 milligrammes, this effect is more marked.

This test is usually described as a measure of daylight or sunlight. In view of the foregoing, it will be seen that some definition of terms is advisable. The writer prefers to follow the average man who thinks of light as something which can be seen, and to define daylight as that portion of solar radiation lying in the visible (roughly 400-750 mm.). This at least provides a distinction from the ultra-violet part of solar radiation (300-400 mm.). Within the limits of this definition the test is certainly not strictly a measure of daylight only; nevertheless, there is a reasonably good agreement between the results and readings of bright sunshine obtained by the Campbell-Stokes instrument.<sup>5</sup>

The following tables show typical results obtained by these tests in Salford and Leeds. The results in Park Square, Leeds, are compared with Headingley on the outskirts. There is a notable loss of light in the centre of each city. The Leeds results as a whole are somewhat higher than the Salford; whether this represents a real difference or is due to some variable in the test itself is doubtful. The greatest caution should be used in comparing results obtained by different observers, owing to possible slight differences in technique; it is, however, believed that if the directions given at the commencement of this article are strictly followed, results obtained by different observers should be reasonably comparable. Observers should state at what hour of the 24 their tests are begun.



TABLE 14.

AVERAGE DAILY VALUES : MILLIGRAMMES OF IODINE.

1930.	SALFORD.				LEEDS.	
	Regent Road.	Ladywell Sanatorium.	Drink-water Park.	Nab Top Sanatorium.	Park Square.	Headingley.
January .....	1.98	2.36	2.37	2.69	2.13	2.78
February .....	2.31	2.78	2.43	4.01	2.94	4.06
March .....	3.58	4.30	3.97	4.46	5.60	6.73
April .....	4.63	4.77	5.16	5.90	5.30	6.79
May .....	6.37	6.60	6.52	7.21	8.10	9.09
June .....	7.17	8.34	7.79	9.12	8.53	9.11
July .....	6.34	6.82	6.91	7.12	8.29	9.03
August .....	5.10	4.83	3.83	4.24	7.77	8.56
September .....	5.83	6.56	6.01	6.17	5.84	6.88
October .....	4.85	4.96	4.30	5.06	4.27	6.20
November .....	2.60	2.77	2.69	3.82	3.10	4.40
December .....	1.45	1.75	1.93	2.52	1.27	1.97
Average .....	4.36	4.74	4.50	5.02	5.26	6.30
Total Deposit....	140.50	74.68	Not available.	49.34	137.6	47.5

## REFERENCES.

- <sup>1</sup> Bagnall, "Analyst," 1929, 54, 101.
  - <sup>2</sup> Moss and Knapp, "Analyst." 1929, 54, 334.
  - <sup>3</sup> Annual Report of Salford City Analyst, 1930.
  - <sup>4</sup> Winther, "Z. phys. Chem., 1924, 108, 236.
  - <sup>5</sup> Annual Report of Salford City Analyst, 1932.
- Berthoud and Nicolet, "Helv. Chim. Acta," 1927, 10, 475.
- Reports on Atmospheric Pollution, 14th to 20th Reports.

## OTHER PHOTOCHEMICAL METHODS.

Certain other methods are now receiving a trial. These include the oxalic acid method of Anderson and Robinson<sup>1</sup>; the new photographic method of Dr. Ashworth and a method developed in these laboratories from original work by Gillam and Morton<sup>2</sup>. Dr. Ashworth's photographic recorder was tried in the experimental stages some years ago<sup>3</sup>. Certain defects of the experimental apparatus have been overcome in the new form. The observation of Gillam and Morton that nitrite is produced by the action of ultra-violet light in an alkaline solution of potassium nitrate and their suggestion that this photochemical reaction could be used as a measure of ultra-violet light has been the subject

of daily tests since September, 1935. The estimation of nitrite has been simplified by the use of Riegler's method with a Hellige disc in place of the more elaborate Griess-Hosvay method. Very promising results have been obtained along these lines, but twelve months tests are necessary before an opinion can be expressed.

The acetone-methylene-blue method of Webster, Hill and Eidinow<sup>1</sup> has also been tried over a considerable period, but the results have not been satisfactory. This method does not appear to be sufficiently sensitive. Some criticism of it has recently appeared<sup>2</sup>. All these methods profess to measure ultra-violet light.

## REFERENCES.

- <sup>1</sup> "J. Amer. Chem. Soc.," 1925, *47*, 718.
- <sup>2</sup> "J. Soc. Chem. Ind.," 1927, *46*, 415.
- <sup>3</sup> Annual Report of Salford Analyst, 1932, "Analyst," 1933, *58*, 690.
- <sup>4</sup> "Lancet," 1924, *1*, 745.
- <sup>5</sup> Mayerson, "Amer. J. Hygiene," 1935, *22*, 100, "Analyst," 1935 *60*, 723.

**Sulphur Pollution.**

Tests have been made by the lead peroxide method at Regent Road and Ladywell Sanatorium for ten months of the year. The figures are calculated as milligrammes sulphur trioxide per 100 sq. centimetres of surface. They show a very striking rise in the winter.

TABLE 15.

Month.	Milligrammes Sulphur Trioxide per 100 Sq. Centimetres.	
	Regent Road.	Ladywell Sanatorium.
March .....	145.2	140.7
April .....	77.0	100.0
May .....	49.0	30.0
June .....	50.0	29.0
July .....	53.0	51.0
August .....	60.0	57.0
September .....	56.0	54.0
October .....	70.0	63.0
November .....	136.6	119.6
December .....	178.1	157.5

255 daily tests by the volumetric method have also been made.

### Examination of Soot Gauge Deposits.

The work of examining the deposits in the special gauges placed at various points in the city has been continued. Standard gauges are situated at Peel Park, Salford; Ladywell Sanatorium; Drinkwater Park Hospital; and the Corporation Sanatorium at Marple, Cheshire.

In uniformity with the results expressed by other stations, of which there is a number scattered throughout Great Britain, the results are expressed in metric tons per square kilometre. The metric ton is equivalent to slightly more than the British ton, whilst there are 2.59 square kilometres to the square mile, so that to convert metric tons per square kilometre to English tons per square mile, it is necessary to multiply by 2.55, or roughly,  $2\frac{1}{2}$ . The following are the average monthly results that have been obtained during the year. The results from Ladywell Sanatorium and Drinkwater Park are very similar and are rather less than the city area, whilst, as was to be expected, the air at Marple is, comparatively speaking, "pure."

In order that comparison may be made with other districts, the average figures are given for the gauges giving the greatest and least deposits. The gauge showing the least deposit is Rothamstead, and that showing the greatest is Netherfield Road, Liverpool.

Perhaps the most noticeable feature of the results is the acid nature of the deposits. This is shown by the pH values of the water collected. The pH due to the carbonic acid in the air would be about 5.5. Figures below this, therefore, indicate an acid deposit, and higher figures, an alkaline reaction. Considering that Marple is fairly well in the country, and shows a general record better than those obtained in the city, its acid rainwater is noteworthy. This shows how widespread may be the drift of the acid smoke from our cities.

There is a marked increase in certain figures for Ladywell Sanatorium—soluble solids, sulphates and acidity. This suggests that new sources of soluble sulphur impurities are appearing in this district.

TABLE 15.

## SOOT GAUGE OBSERVATIONS.

Monthly Averages : Metric Tons per Square Kilometre.

	Salford : Peel Park.	Salford : Ladywell Sanatorium.	Salford : Drinkwater Park.	Marple : Nab Top Sanatorium.	Netherfield Road, Liverpool.	Rotham- stead.
Rainfall in millimetres.....	72.6	81.8	79.2	69.9	66.0	47.0
Tar.....	0.22	0.12	0.11	0.06	0.18	Nil
Carbonaceous Matter other than tar.....	2.03	2.03	1.25	0.67	3.01	0.50
Ash.....	3.91	2.85	1.85	0.80	8.68	0.73
Loss on ignition.....	1.11	1.73	0.96	0.89	3.51	0.78
Ash.....	2.40	2.38	1.71	1.25	4.27	0.76
Total Solids.....	9.67	9.13	5.88	3.68	19.65	2.77
Sulphates.....	0.88	1.17	0.69	0.58	2.21	Not Available
Chlorine.....	0.74	0.82	0.78	0.59	1.27	
Ammonia.....	0.01	0.03	0.02	0.02	0.20	
Acidity.....	0.28	0.34	0.32	0.21	0.30	
pH.....	4.4	4.3	4.3	4.7	4.7	

TABLE 16.

pH VALUES FOR THE FOUR STATIONS.

Month.	Peel Park.	Drinkwater Park.	Ladywell Sanatorium.	Nab Top Sanatorium, Marple.
January.....	3.5	3.7	3.7	3.8
February.....	4.5	4.0	4.5	4.6
March.....	4.8	4.4	4.3	4.6
April.....	4.6	4.5	4.4	4.6
May.....	4.3	4.4	4.4	4.8
June.....	4.6	4.6	4.6	5.0
July.....	4.4	4.4	4.5	4.8
August.....	4.3	4.8	4.8	5.6
September.....	4.5	4.4	4.3	4.7
October.....	4.5	4.5	4.4	5.0
November.....	4.4	4.2	4.0	4.6
December.....	4.4	4.2	4.2	4.4
Average for 1935..	4.4	4.3	4.3	4.7



## APPENDIX I.

## FREEZING POINT OF MILK SAMPLES, 1935.

Sample No.	Fat.	Solids-not-fat.	Total Solids.	Freezing Point $\Delta$ Hortvet.	ADDED WATER.	
					Calc. from Sale of Milk Regulations	Calc. from Freezing Point.
8958 .....	3.3	8.00	11.30	0.490	5.9	7.6
8970 .....	3.6	8.22	11.82	0.502	3.3	5.3
8971 .....	3.3	8.05	11.35	0.481	5.3	9.2
8972 .....	3.2	7.46	10.66	0.472	12.2	10.9
8973 .....	3.7	8.09	11.79	0.503	5.1	5.1
8974 .....	4.2	8.13	12.33	0.503	4.3	5.1
8975 .....	3.9	8.60	12.50	0.538	none	none
8976 .....	3.2	8.31	11.51	0.511	2.2	3.6
8977 .....	3.3	8.63	11.93	0.537	none	none
8978 .....	3.4	8.62	12.02	0.538	none	none
8979 .....	4.08	8.47	12.55	0.532	0.4	none
8980 .....	4.4	8.26	12.66	0.530	2.8	none
8981 .....	3.5	8.66	12.16	0.545	none	none
8982 .....	3.4	8.60	12.00	0.544	none	none
8983 .....	3.8	8.49	12.29	0.542	0.1	none
A 19 .....	4.0	8.16	12.16	0.518	4.0	2.3
M 91 .....	3.2	8.20	11.40	0.549	3.5	none
M 107 .....	3.0	8.32	11.32	0.542	2.1	none
9232 .....	3.2	8.43	11.63	0.507	0.8	4.3
9233 .....	3.3	8.45	11.75	0.508	0.6	4.1
9244 .....	3.25	8.59	11.84	0.513	none	3.2
9245 .....	3.3	8.40	11.70	0.512	1.2	3.4
9250 .....	3.5	8.72	12.22	0.517	none	2.4
9251 .....	2.8	8.71	11.51	0.522	none	1.5
9253 .....	3.1	8.70	11.80	0.526	none	0.8
9254 .....	3.2	8.70	11.90	0.523	none	1.3
9255 .....	3.6	8.90	12.50	0.535	none	none
9257 .....	3.7	9.00	12.70	0.536	none	none
9259 .....	2.85	8.31	11.16	0.526	2.2	0.8
9262 .....	2.85	8.20	11.05	0.530	3.5	none
9266 .....	3.2	8.80	12.00	0.533	none	none
9267 .....	2.55	8.68	11.33	0.533	none	none
9275 .....	3.85	8.75	12.60	0.539	none	none
9276 .....	4.0	8.30	12.30	0.528	2.3	0.4
9277 .....	2.9	8.76	11.66	0.526	none	0.8
9278 .....	3.0	8.71	11.71	0.528	none	0.4
M 433 .....	3.2	8.35	11.55	0.546	1.8	none
9282 .....	3.6	9.20	12.80	0.543	none	none
9283 .....	3.2	8.90	12.10	0.534	none	none
9284 .....	3.3	9.00	12.30	0.536	none	none
9342 .....	3.0	8.40	11.40	0.527	1.2	0.6
9343 .....	3.1	8.40	11.50	0.463	1.2	12.6
9344 .....	2.8	8.20	11.00	0.515	3.5	3.0
9345 .....	3.2	8.40	11.60	0.515	1.2	3.0
9369 .....	3.1	8.38	11.48	0.515	1.4	3.0
9370 .....	2.95	8.63	11.58	0.530	none	none

FREEZING POINT OF MILK SAMPLE.—*Continued.*

Sample No.	Fat.	Solids-not-fat.	Total Solids.	Freezing Point Δ Hortvet.	ADDED WATER.	
					Calc. from Sale of Milk Regulations	Calc. from Freezing Point.
9472 .....	3.8	8.40	12.20	0.550	1.2	none
9473 .....	4.0	8.50	12.50	0.554	none	none
9474 .....	3.2	8.40	11.60	0.534	1.2	none
9475 .....	3.3	8.40	11.70	0.534	1.2	none
9535 .....	3.5	8.40	11.90	0.507	1.2	4.3
9536 .....	3.8	8.50	12.30	0.502	none	5.3
9549 .....	3.3	8.40	11.80	0.530	1.2	none
9550 .....	3.1	8.40	11.50	0.530	1.2	none
9553 .....	3.3	8.20	11.50	0.528	3.5	0.4
9554 .....	3.4	8.20	11.60	0.528	3.5	0.4
9555 .....	3.7	8.50	12.20	0.533	none	none
9556 .....	3.5	8.50	12.00	0.534	none	none
9699 .....	4.4	7.67	12.07	0.440	9.8	17.0
9707 .....	5.2	9.20	14.40	0.545	none	none
9708 .....	5.0	8.90	13.90	0.548	none	none
9709 .....	4.75	9.55	14.30	0.545	none	none
9710 .....	4.65	8.95	13.60	0.535	none	none
9711 .....	4.7	9.30	14.00	0.533	none	none
9935 .....	3.05	8.63	11.68	0.540	none	none

## SECTION VII.

# Maternity and Child Welfare Department, Municipal Maternity Home and Babies' Hospital, and the Supervision of Midwives.

**Staff.**

- 1 Senior Lady Medical Officer, who is also Inspector of Midwives.
- 2 Assistant Lady Medical Officers.
- 1 Assistant Inspector of Midwives.
- 16 Health Visitors.
- 3 Masseuses, 2 of whom are also employed in the Artificial Sunlight Clinic.
- 7 Clerks.

**Medical Officers.**

The Medical Officers conduct all examinations of mothers and children attending the Clinics and Centres.

The Senior Medical Officer attends five Child Welfare Sessions, two Sessions for consultation *re* Artificial Sunlight treatment, and two Ante-natal Clinics per week, supervises the work of the Health Visitors, and attends two Ante-natal and one Child Welfare session per month at the Royal District Nurses' Home. She also visits and inspects the children at the ten Nursery Classes and the Nursery School. In addition, she attends meetings of four Voluntary Societies who undertake work in connection with Maternity and Child Welfare, and has charge of the administration of the department.

The second Medical Officer has charge of the Municipal Maternity Home and Babies' Hospital, in addition to which she attends three Child Welfare Centres and two Ante-natal Clinics weekly.

The third Medical Officer attends Child Welfare Clinics and Centres during seven Sessions per week; she also attends two Ante-natal Sessions and one Diphtheria Immunisation Clinic. She is also on call as Anæsthetist and does relief work at the Municipal Maternity Home and Babies' Hospital.

**Health Visitors.**

Each Health Visitor is allotted a district, to the visiting of which most of her time is devoted. It is her duty to visit each child residing on her district, and to keep a record of its progress until it reaches the age of five years; to visit and advise expectant mothers, and to carry on the work of the various Maternity and Child Welfare Clinics and Centres.

All Health Visitors are now Authorised Inspectors under the Children Act, 1908, and the Children and Young Persons Act, 1932, and have authority to visit and inspect children under the age of nine years who are nursed by foster-mothers, for reward, and who are, therefore, required to be registered under the Children Acts.

During the past two or three years it has been the practice of the Medical Staff of the Children's Wards at Hope Hospital, to notify the Maternity and Child Welfare Department of the discharge from Hospital of all children under the age of five years, together with notes *re* the feeding and treatment advised. These cases are "followed up" immediately by a special visitor in order that advantage may be taken of the facilities offered by the Child Welfare Department, *i.e.*, free milk, massage, sunlight treatment, etc.

During the year 1935, 170 such cases have been investigated and 212 visits paid.

The following table shows the number of visits by the Health Visitors during 1935 :—

TABLE C.W. 1.

Ward.	First Visits to Ex- pectant Mothers.	First Visits to Children under 1 year.	Total Visits to Children under 1 year.	Total Visits to Children 1 to 5 years.	Total Visits to Ex- pectant Mothers.	Grand Total.
Albert Park.....	93	249	981	1579	122	2682
Charlestown.....	37	211	990	1546	46	2582
Claremont and Weaste....	74	318	1130	2197	94	3421
Crescent.....	101	279	848	1951	135	2934
Docks.....	53	190	963	1993	113	3069
Kersal.....	32	167	489	753	36	1278
Langworthy.....	64	156	733	2276	75	3084
Mandley Park ...	56	469	656	1525	67	2248
Ordsall Park.....	72	232	950	1674	88	2712
Regent.....	85	245	1284	1795	93	3172
St. Matthias'....	81	248	1556	2698	135	4389
St. Paul's.....	47	181	1124	2298	122	3544
St. Thomas'.....	112	207	1068	2086	121	3275
Seedley .....	34	117	488	995	39	1522
Trinity.....	153	264	1237	2205	229	3671
Special Visits.....	....	13	95	50	....	145
	1094	3546	14592	27621	1515	43728

#### Clerks.

A considerable amount of clerical work is involved in the Maternity and Child Welfare Scheme, the principal duties of the Clerks being as follows :—

To attend the Maternity and Child Welfare Clinics and Centres in order to record attendances, weights, etc., and to issue charts and cards in respect of patients.

To sell dried food to mothers and keep records relating thereto.

To administer the scheme for assisting necessitous persons.

To conduct correspondence, prepare reports, compile returns for the Ministry of Health, etc., and to keep such records and registers as are required in connection with the administration of the various Acts

#### **Transfer of Information to the School Medical Department.**

During the past three years, histories of children attaining the age of five years, have been transferred to the School Medical Department. It has not been possible with the staff available to transfer the whole of the cases, but in every case where the child's health has not been satisfactory, a resumé of all the information which has been collected by the Department is sent to the School Medical Officer, together with a note of the school which the child is to attend.

#### **Maternity and Child Welfare Centres.**

CLINICS. Municipal Buildings, Regent Road.  
Teneriffe Street Schools, Broughton.  
Police Street, Pendleton.

CENTRES. Ordsall Centre, Landseer Street.  
10-12, Encombe Place.  
St. John's Schools, Langworthy Road.  
Congregational Church, Irlams-o'-th'-Height.  
Municipal Buildings, Regent Road

The negotiations commenced in 1934, with a view to the securing of better accommodation in place of the Teneriffe Street Clinic, proceeded during 1935. Two large houses, at the corner of Murray Street and Great Clowes Street, Broughton, were purchased and have now been adapted for use as a Maternity and Child Welfare and School Medical Clinic. The new Clinic was opened in January, 1936, and promises to be very successful.

The Clinics are open daily and the Centres weekly, and the object of the staff is to make the work educational and preventive. Every child attending is weighed weekly, and is thoroughly examined by the Medical Officer at its first attendance, and at regular monthly intervals until it is one year old. Medical examinations are then made every three months unless the child is receiving massage, sunlight, or other special treatment, when examinations are made more frequently.

The cases attending the Clinics and Centres are "followed up" by the Health Visitors, who help the mothers to carry out the instructions given.

Table C.W. 2 shows the number of attendances at the Child Welfare Centres and the number of consultations held during 1935.



TABLE C.W. 2.

ATTENDANCES AT CHILD WELFARE CLINICS AND CENTRES DURING 1935.

CLINICS AND CENTRES.	NEW CASES.		TOTAL ATTENDANCES.		CONSULTATIONS.	
	Under 1 year.	Over 1 year.	Under 1 year.	Over 1 year.	Under 1 year.	Over 1 year.
Regent Road Clinic.....	213	96	2,647	3,906	1,222	1,609
Teneriffe Street Clinic.....	434	184	6,658	4,804	2,576	1,912
Police Street Clinic.....	491	114	8,409	6,186	2,637	1,974
Ordsall Centre.....	153	28	2,579	1,705	737	469
Encombe Place Centre.....	284	55	4,682	3,385	1,090	708
Seedley Centre.....	339	50	5,807	2,949	989	609
Regent Road Centre.....	248	46	3,148	1,902	859	662
The Height Centre.....	97	21	1,896	658	602	333
	2,259	594	35,826	25,495	10,712	8,276

**Ante-Natal Clinics.**

At the Ante-natal Clinics, pregnant women are examined and advised at their first attendance, and at regular monthly intervals until their confinement. In this way difficulties which might occur at confinement can be foreseen and avoided. Abnormal cases are seen more frequently, and when necessary, the patient is referred to a specialist or to a hospital for the appropriate treatment. Arrangements are made for suitable applicants to be admitted to the Municipal Maternity Home, and these cases are kept under special observation.

In addition to the two Clinics mentioned above, the Senior Medical Officer attends the Ante-natal Clinic held twice monthly at the Royal District Nurses' Home. Cases attending this Clinic who require to be seen more often are asked to attend the Clinic at Regent Road.

It has been the practice to request new patients attending the Ante-natal Clinics to consult the dentist. The Maternity and Child Welfare Committee have for some years retained the services of a School Dental Officer for one session per week. During 1935, 100 expectant mothers were examined by the Dentist. This small number gives some indication of the great difficulty which is experienced in persuading mothers to take advantage of the service. As will be mentioned elsewhere in this Report, the Dental Officer also devotes part of the weekly session to the treatment of children referred by the Medical Staff of the Maternity and Child Welfare Department.

It has not yet been found possible to establish a Post-natal Clinic in connection with the district Clinics. It has, however, for some years been the practice of the Clinic Medical Officers to advise nursing mothers at the ordinary sessions. During the year 288 consultations of this type took place.

The staff of the Maternity and Child Welfare Department gratefully acknowledge the assistance which they have received from the Medical staffs of the Tuberculosis Department, the Municipal Clinic and the Pathological Department in the diagnosis and treatment of cases attending the Ante-natal Clinics.

Table C.W. 3 shows the number of attendances at the Ante-natal Clinics, and the number of consultations held during 1935.

**TABLE C.W. 3.**  
ATTENDANCES AT ANTE-NATAL CLINICS DURING 1935.

Clinics and Centres.	New Cases.	Total Attendances.	Con-sultations.
Regent Road Clinic.....	354	2,013	2,013
Teneriffe Street Clinic.....	150	314	294
Police Street Clinic.....	124	273	253
Ordsall Centre.....	21	31	31
Encombe Place Centre.....	24	50	50
Seedley Centre.....	5	6	6
Regent Road Centre.....	6	9	9
The Height Centre.....	7	7	7
	691	2,703	2,663

In addition to the above there were 5,285 attendances at the Hope Hospital Ante-natal Clinic and 842 at the Royal District Nurses' Home Ante-natal Clinic.

**Birth Control.**

In April, 1934, the Council decided to accept financial responsibility for cases referred by the Maternity and Child Welfare Medical Staff to the "Salford Mothers' Clinic," for advice and information relating to contraception.

The cases referred are married women in whose cases further pregnancy is, in the opinion of the Medical Officer, liable to be detrimental to the health of the mother.

During 1935, 23 cases were referred to the Clinic, 13 of whom attended.

**Maternal Mortality.**

The problem of maternal deaths is still engaging the careful attention of the Department. The Ministry of Health are pressing Local Authorities to make fuller use of their legislative powers, and every effort is being made to reduce the maternal mortality rate in the City to a minimum.

The 18 maternal deaths which occurred in the City during the year 1935 were thoroughly investigated, and reports thereon sent to the Maternal Mortality Committee of the Ministry of Health.

In nine cases death was considered to have been unavoidable. In the remaining nine cases it was considered that death might have been avoided. In one case the intelligent co-operation of the patient was lacking; in two cases there had been no Ante-natal treatment; two cases had had inadequate Ante-natal treatment; and in four cases death was due to puerperal sepsis following abortions.

**Massage Treatment.**

Massage treatment is given for Rickets and other Orthopædic conditions, at the Clinics and Centres. The results in all cases where the children are brought regularly, and for a sufficient length of time, are very satisfactory. The children attending for massage treatment are seen regularly by the Medical Officers. In cases where the mothers cease attending before the children are officially discharged, the Health Visitor investigates and invites them to re-attend. After they have been discharged, the mothers are asked to bring them regularly to the Child Welfare Centres in order that they may be kept under observation.

During the year 1935, the following cases have been dealt with :—

Clinics and Centres.	No. of Sessions held Weekly.	No. of Regular Cases.	No. of Casual Cases.	Cases Discharged Cured.	Total No. of Attendances.
<b>CLINICS—</b>					
Regent Road.....	10	141	58	21	4028
Tencriffe Street.....	3	66	78	24	1594
Police Street.....	2	50	63	20	1165
<b>CENTRES—</b>					
Encombe Place.....	1	44	53	11	603
Ordsall.....	1	26	19	5	585
Seedley.....	2	59	53	32	1045
Babies' Hospital....	1	41	13	54	384
	20	427	337	167	9404

### Artificial Light Clinic.

The work of this Clinic continues to be successful. The conditions for which artificial sunlight is administered are Rickets, Anæmia, Marasmus and Debility following acute infectious diseases. The results obtained are very gratifying, and only a few cases fail to respond to treatment. After discharge from the Sunlight Clinic each child is kept under observation by the Medical Officer at the Child Welfare Centre. In a few special cases, a second course of treatment has been found necessary. The treatment is administered by a competent operator under the supervision of the Medical Officer. All cases are examined regularly during the course of treatment.

The following are the Sunlight Clinic figures for the year 1935 :—

Individual cases.....	209
Total attendances.....	3031
Cases discharged.....	87
Very much improved.....	4
Much improved.....	22
Improved.....	61
No improvement owing to irregular attendance.....	90

### Assisted Milk Scheme.

Assistance has been given during the year to 1,781 applicants, free milk being granted to 1,749, and milk at part-payment to 32.

The practice of supplying expectant and nursing mothers with a brand of dried chocolate milk, instead of liquid milk, with the object of ensuring that the mother herself takes the food, and does not distribute it among other members of her family, has been continued during 1935 and has proved satisfactory.

Every case assisted is kept under careful observation and required to attend regularly at a Clinic or Centre. Regular investigation is made into the financial circumstances of all cases, during the period in which they are receiving assistance from the Corporation.

### Sewing Classes.

Sewing classes are held on one half day per week at four Centres, at which mothers are taught to make hygienic clothing and "thrift" garments, i.e., garments made from cast-off adult clothing, for their children. A Health Visitor attends each of these classes, and at three of the Centres help is given by voluntary workers who are members of the Salford Mothers' Guild and Ladies' Public Health Society.

### Dinners for Expectant and Nursing Mothers.

Arrangements are made with the Salford Mothers' Guild and Ladies' Public Health Society for the serving, on every full working day, of dinners for expectant and nursing mothers at the Ordsall, Encombe Place and Police Street Centres. One Health Visitor is in attendance at least one day per week at each Centre, the remainder of the work being carried on by voluntary assistance. Every expectant mother attending the Centres for dinners is asked to attend the Ante-natal Clinic regularly, and is kept under medical supervision.

### **Diphtheria Immunisation.**

Intensive propaganda work has been carried on by the Health Visitors in connection with Diphtheria Immunisation. The results have been very encouraging, particularly at the Police Street and Teneriffe Street Centres.

### **Home Helps.**

The applicants for Home Helps are usually known to the Maternity and Child Welfare Department through the Free Milk Scheme, and are consequently deserving cases. Home Helps are only supplied where there is absolutely no one to look after the home and other children whilst the mother is in bed. The Home Help attends at the home for ten days from the day of confinement, her hours being from 8 a.m. to 2 p.m., for which she receives from the Corporation 4s. 0d. per day, but provides her own food. Her duties are to look after the house and children generally, see older children off to school, and prepare meals for the mother and the rest of the family. She does not do the family wash, but may, if necessary, wash baby clothes in readiness for the Midwife's visit. As far as possible Home Helps are supplied from the district in which the patient lives, for the sake of convenience, and in order to save travelling expenses. If it is necessary to supply a Home Help who lives some distance away from the patient, reasonable travelling expenses are allowed.

There are four Home Helps on the books at present, they being women who are particularly suited for the work, and who are well known to the Health Visitors as to character, reliability, etc.

The Scheme has been in operation since 1920, and has worked very satisfactorily. During the year 1935, 4 women have been employed as Home Helps and 27 necessitous cases have been assisted.

### **Children Act, 1908, and Children and Young Persons Act, 1932.**

The following is a report of work done in the administration of the Acts during 1935 :—

Cases on Register at end of 1934 .....	52
New Registrations during 1935 .....	21
Children removed from Register .....	29

#### **Including—**

Children removed from Salford .....	8
„ adopted without reward .....	2
„ attained age of nine years.....	5
„ returned to parents.....	11
„ admitted to institutions.....	3
„ died .....	—
„ remaining on Register.....	44
Total Visits paid during 1935.....	617



### **Nursery Classes and Nursery Schools.**

It is most desirable that all children attending Nursery Classes and Nursery Schools in the City should be medically inspected at regular intervals. In schools where the numbers of such children are small, and in all cases of children between the ages of four and five years, this work is carried out by the Assistant School Medical Officers. Where there are larger classes, however, the Senior Maternity and Child Welfare Officer visits the schools.

During the past year the Senior Medical Officer has visited and examined the children attending the Nursery Classes at 14 elementary schools, and has also visited the Salford Nursery School, Hulme Street, each month. The number of children attending Nursery Classes is increasing year by year.

In most cases the mothers of the children were present at the time of examination and were advised as to the treatment and management of their children. In several cases the children were referred to the Child Welfare Centres for observation, others were referred to Hospitals for the appropriate treatment, eye defects being sent to the Manchester Eye Hospital, and severe dental caries to the School Medical Dental Clinic. The School Dental Officer had 211 consultations with cases so referred during 1935.

TABLE C.W. 3.—NOTIFICATION OF BIRTHS.

Wards.	Mid-wives.	LIVE BIRTHS NOTIFIED BY				Births transferred to other Local Authorities.	Total live births notified.	Live births not notified.	Still-births notified.	St. Mary's Still-births
		Medical Practitioners.	Manchester Hospitals and Other Local Authorities.	Municipal Maternity Home.	Hope Hospital.					
Albert Park.....	131	17	20	17	52	1	236	1	17	1
Charlestown.....	128	4	5	18	60	1	214	1	12	—
Claremont.....	77	13	13	12	26	—	141	5	7	2
Crescent.....	164	23	9	16	74	1	285	2	24	3
Docks.....	96	—	6	20	35	3	154	2	13	—
Kersal.....	62	26	16	15	22	4	137	6	3	2
Langworthy.....	90	1	3	9	43	1	145	1	12	—
Mandley Park.....	112	14	88	13	34	15	196	5	15	2
Ordsall Park.....	140	5	7	11	57	1	219	—	11	—
Regent.....	124	20	9	6	48	1	206	1	18	3
St. Matthias'.....	171	20	9	12	54	1	265	2	16	—
St. Paul's.....	122	—	1	11	46	1	179	—	12	—
St. Thomas'.....	129	2	5	10	75	—	221	1	15	—
Seedley.....	59	—	2	17	44	2	120	1	4	2
Trinity.....	132	42	12	13	62	3	258	—	13	2
Weaste.....	102	2	5	16	41	16	150	2	7	—
	1,839	189	160	216	773	51	3,126	30	199	17

## Municipal Maternity Home and Babies' Hospital.

The Hospital has accommodation for 10 maternity cases and 16 children.

The Staff consists of the Medical Officer, Matron, Sister, four Staff Nurses and eight Probationer Nurses. The Hospital is recognised by the Central Midwives Board as a training school for midwives.

All cases for the Maternity Home are booked at the Regent Road Antenatal Clinic, where they are required to attend regularly. There is no difficulty in persuading patients to attend this Clinic and as a result prompt treatment is available for any abnormalities which are found, thus avoiding serious complications at the time of confinement.

When they are discharged from the Home, patients are invited to attend the Child Welfare Centres where they may receive advice regarding their own health and that of their babies.

### MATERNITY DEPARTMENT.

ADMISSIONS .....	228
BIRTHS.....	216
STILLBIRTHS.....	16
DEATHS OF INFANTS.....	8
CASES WHERE MEDICAL ASSISTANCE WAS REQUIRED.....	93

### BABIES' DEPARTMENT.

The 16 beds for children are divided into 10 beds for cases of Rickets, and six beds for cases of Marasmus and Nutritional Disorders. These cases require a stay of three to four months in Hospital for the treatment to be successful, and only a limited number can, therefore, be admitted in the course of a year. The results obtained are very satisfactory. A Sunlight Lamp is used for the treatment of Rickets and Marasmus. Clinical treatment is supplemented by natural sunlight and fresh air. In the summer months it is often possible to keep the children out of doors all day. When a child is discharged from Hospital, the mother is given written instructions as to feeding, etc.

ADMISSIONS DURING 1935 .....	74
DISCHARGES DURING 1935 .....	71

#### *Cured.*

18 Rickets.
16 Marasmus.
6 Malnutrition.
10 Rickets and Malnutrition.
3 Anæmia.
3 Dyspepsia.
1 Post Whooping Cough and Rickets.
1 Debility.
1 Chronic Gastritis.

*No improvement*—Discharged at parents' request.

10 Rickets.

*Transferred to other Hospitals.*

1 Pyloric Stenosis.

1 Abdominal Tumour with Rickets.

#### DEATHS.

Three children died during the year, the causes being as follows :—

1 Marasmus and Chronic Gastritis.

1 Convulsions, Marasmus and Prematurity.

1 Prematurity.

### Supervision of Midwives.

There are 71 midwives on the register in Salford ; 10 are connected with Public Institutions, leaving 61 midwives practising in the City, of whom 48 reside within the City.

Ten midwives removed from the district in 1935, three of these being from the District Nurses' Home and seven from Institutions ; two midwives changed their addresses and eleven were newly registered.

The midwives are regularly visited, and their books, instruments, etc., inspected by the Assistant Inspector of Midwives under the supervision of the Senior Medical Officer. During the year, 338 visits were paid to midwives, and in addition 768 miscellaneous visits were paid, making a total of 1,106.

From time to time, meetings are held at the Police Street Child Welfare Clinic, where midwives may discuss with the Medical Officer, any difficulties which may arise in their practices, and where the Medical Officer brings to their notice any points which she wishes them to observe.

During the year, 1,723 cases were attended by midwives, and 190 cases were attended by doctors with midwives acting as maternity nurses.

#### Notifications.

Under the Midwives Act, 1902, midwives are required to make the following notifications to the Local Supervising Authority :—

1. Each time they require to call in a doctor.
2. Any contact with infectious disease other than puerperal fever or puerperal pyrexia.
3. Stillbirths.
4. Deaths of infant or mother.
5. Substitution of artificial feeding for breast feeding.

**Medical Assistance.**

During the year, 889 notifications of a midwife having sent for medical assistance were received, the causes being as follows :—

Deformed Pelvis.....	2
Abnormal Presentations .....	61
Ante-partum Hæmorrhage.....	33
Placenta Prævia.....	5
Post-partum Hæmorrhage.....	20
Uterine Inertia.....	96
Obstructed Labour, or requiring instrumental assistance.	116
Retained Placenta or Membranes .....	26
Ruptured Perineum.....	218
Rise of Temperature.....	22
Eclampsia.....	2
Premature Birth.....	27
Miscarriage and Abortion.....	9
Inflammation of Eyes .....	105
Other causes relating to Mother.....	96
Other causes relating to Child .....	51
Total... ..	889

**Contact with Infectious Disease.**

Three notifications of contact with infectious disease were received from midwives during 1935. Two on account of having been in contact with Pemphigus Neonatorum, and one in connection with other infection. In each case the midwife was disinfected at the Mode Wheel Disinfecting Station.

**Investigation of Stillbirths.**

Seventy-two stillbirths were notified by midwives in domiciliary practice during 1935. The increase appears to be chiefly due to a larger number of cases of premature birth and macerated fœtus. Each case was thoroughly investigated and the cause found to be as follows :—

- 5 Abnormal Presentation.
- 11 Premature Birth (3 Toxæmia of pregnancy, 1 Ante-partum hæmorrhage).
- 2 With history of previous stillbirths. (In these cases post-natal examination was advised).
- 2 Precipitate Labour—born before arrival of help.
- 18 Macerated fœtus—2 born before arrival of help.
- 1 Placenta Prævia.
- 4 Ante-partum Hæmorrhage and general ill-health of mother.
- 3 Illness of mother.
- 7 Deformities of fœtus.
- 2 Asphyxia Neonatorum.
- 2 Hydramnios.
- 3 Accident to mother.
- 3 Albuminuria and High Blood Pressure during pregnancy.
- 7 Difficult Labour.
- 2 Cause unknown.



**Investigation of Infant Deaths.**

Twenty-nine notifications of infant deaths were received, the causes being as follows :—

- 1 Pneumonia.
- 8 Prematurity and Debility.
- 5 Prematurity and Cardiac Failure.
- 3 Congenital Malformation.
- 2 Convulsions.
- 1 Injuries from Parturition.
- 2 Asphyxia Pallida.
- 4 Died before medical assistance could be obtained.
- 3 Congenital Heart Disease.

An inquest was held in connection with the four cases where the baby died before medical assistance could be obtained. The Coroner returned a verdict of death from natural causes in three of these cases ; in the fourth case a verdict of " Inattention at birth " was returned. This was a case of an illegitimate baby, and the midwife was not sent for until after the baby was born.

In four cases where infant death occurred, the mother had received no Ante-natal supervision.

**Artificial Feeding of Infants.**

Thirty-four notifications of the Substitution of Artificial Feeding for Breast Feeding of Infants were received from midwives during the year 1935. In 13 of these cases the artificial feeding was ordered by the doctor in attendance. Eight cases had insufficient secretion of breast milk, four mothers refused to feed their babies and three were returning to work. In the remaining six cases the baby was partially breast-fed.

**Public Health (Notification of Puerperal Fever and Puerperal Pyrexia Regulations), 1926 and 1928.**

**PUERPERAL FEVER.** Eighteen cases were notified during the year.

- 7 cases occurred in the domiciliary practice of midwives.
- 9 " " in Hope Hospital.
- 2 " " in the practices of doctors.

**PUERPERAL PYREXIA.** Twenty-three cases were notified during the year.

- 13 cases occurred at Hope Hospital (2 were confined at home and 2 admitted during labour).
- 10 cases occurred in the domiciliary practice of midwives (7 were removed to Hospital).

All cases were thoroughly investigated by the Assistant Inspector of Midwives and every precaution taken to prevent the spread of the disease. This includes the temporary suspension of the midwife and disinfection of her person, bag and clothing, and the careful supervision of other cases then being attended by her.

As the Regulations require prompt notification of any rise of temperature, special attention, and, if necessary, the services of a consultant are quickly available.

Bacteriological examinations of lochia and blood are made on request at the Municipal Laboratory.

**Public Health (Ophthalmia Neonatorum) Regulations, 1926 and 1928.**

The number of cases of Ophthalmia Neonatorum notified under the above Regulations during the year was 28.

10 cases occurred in the domiciliary practice of midwives.

2 „ were notified from the Manchester Royal Eye Hospital.

15 „ were notified from Hope Hospital.

1 case was notified from the Municipal Maternity Home.

In 17 cases, both eyes were affected, and in 11 cases one eye was affected. Five cases were classed as severe, six as moderately severe, 11 as slight and 6 as very slight. All cases recovered without injury to sight.

All notified cases of Ophthalmia Neonatorum are visited by the Assistant Inspector of Midwives, and, where necessary, the case is referred to the Royal District Nurses' Home, and a nurse is sent to carry out treatment under doctor's orders.

During 1935, 105 cases of discharging eyes were notified by midwives in accordance with the Rules of the Central Midwives Board. All cases were visited regularly until the condition had cleared.

**Infectious Diseases Notification Act, 1889.**

**Pemphigus Neonatorum.**

Eight cases of Pemphigus Neonatorum were notified during the year 1935. Two of these cases occurred in Hope Hospital, five occurred in the domiciliary practice of midwives, one occurred in the Municipal Maternity Home. The age of onset varied from birth to three weeks. Every precaution was taken to prevent the spread of the disease. One of the cases proved fatal.

**Assisted Midwifery Scheme.**

The scheme came into operation on April 1st, 1935. During the nine months ending December 31st, 60 applications for assistance under the scheme were received. Assistance was granted in 49 cases, in 10 cases the application was refused, owing to the family income being in excess of the scale allowance. In one case it was found necessary to admit the patient to Hospital for delivery.

Each case is investigated by the Assistant Inspector of Midwives and no assistance is granted under the scheme in cases where the home accommodation is unsuitable for confinement to take place there, or in cases where the mother has had a previous difficult confinement necessitating hospital treatment, such cases being urged to seek admission to Hospital.

In 42 cases compensation of 10s. per patient was paid to midwives in respect of booked cases where the patient had subsequently been sent to Hospital on medical advice.

#### **Midwives Act, 1918.**

Under the Midwives Act, 1918, section 14 (1), the Local Authority is authorised to pay the fees of registered medical practitioners called in by midwives in cases of emergency, and, where possible, recover the fee from the patient or her husband. This ensures that no lying-in woman need be without the services of a qualified medical attendant, however poor her circumstances may be. The doctors' accounts are checked and paid in accordance with the Scale of Fees prescribed by the Ministry of Health.

#### **Nursing Homes Registration Act, 1927.**

One Nursing Home has been registered during the year and one closed. There are now nine Nursing Homes registered in the City; four of these are Maternity Homes, three Medical and Surgical Homes and two Maternity and Medical.

These Homes are inspected regularly by the Senior Medical Officer, assisted by the Assistant Inspector of Midwives.

## SECTION VIII.

# Hope Hospital.

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1. GENERAL.—The general conditions within the Hospital, as to wards and departments, remained the same during 1935 as they were in the previous year. Preparations for the equipment of the new wards and departments took rather longer to accomplish than had been anticipated; particularly the reconstruction of A. Block into a complete Maternity unit proved to be a lengthier piece of work than was estimated. By the end of 1935, however, good progress towards the preparation of the new maternity department had been made, and the purchase, erection and fitting of the equipment for the new wards, theatres, X-Ray department and kitchen were well advanced.

The clinical work of the Hospital increased during the year, and in this, the first year of its work as a General Hospital under the Public Health Acts, the number of admissions (8,371) was the highest in the Hospital's history. The various ancillary departments, *e.g.*, Out-patients, X-Rays, Massage and Electro-therapeutics, all show considerable increases in the work done.

2. MEDICAL STAFF.—Mr. H. T. Simmons, who had for some months been acting in a temporary capacity, was in May appointed Visiting Surgeon (general surgery).

Mr. A. A. Smalley and Mr. L. D. Mercer were appointed as Visiting Surgeons for Diseases of the Ear, Nose and Throat, and they began work in that capacity in May.

Mr. Brown, Dr. Mackay and Dr. Flint continued throughout the year in their respective posts as full-time Surgeon, Physician and Obstetrician.

The changes among the Assistant Medical Officers were as follows :—

On the Staff, January, 1935.	Appointed during 1935.
Dr. Ashford (left August).	Dr. Mattison (April).
Dr. Cunningham (left April).	Dr. Watt (April).
Dr. Davis (left August).	Dr. Tetlow (August).
Dr. Judson	Dr. Hardie (August).
Dr. Cay (left March).	

Dr. Davis left to take up a special temporary appointment under the Salford Public Health Department in connection with diphtheria immunisation among school children.

3. **NURSING STAFF.**—The Matron was absent through illness from her duties from early in October until the end of 1935. Mrs. Broadbridge, first Assistant Matron, was Acting Matron during that time.

In order to attempt to lessen the amount of nursing of chronic cases by probationer nurses in training, the Committee decided in May to try the experiment of appointing a limited number of uncertificated Assistant Nurses for duty in chronic wards. Up to the end of 1935, six such nurses had been appointed. A definite opinion on the merits of this experiment cannot yet be given.

The examination results for 1935 were as follows :—

	Entered.	Passed.	Failed.
1. Hospital Certificates... ..	27	27	nil
2. State Examinations :			
(a) Preliminary . . . . .	33	33	nil
(b) Final . . . . .	29	29	nil
3. C.M.B. Diploma . . . . .	28	22	6

During 1935 there was a striking increase in the number of nursing days lost through illness among the nursing staff. This figure was 2,445 days, as compared with an average of 1,570 days lost annually during the previous three years. This increase is not due to any abnormal increase in the number of sick nurses treated as in-patients, but is due to the fact that a much larger proportion of the nurses who were off sick required prolonged treatment. The actual number of sick nurses treated as in-patients in 1935 was 149, as compared with an average of 150 in the previous four years. But in 1935 the average days lost per nurse off sick was 16, as compared with 11 in the previous four years. Of the 149 sick nurses, 24 were off duty over 30 days each ; of these seven were off duty over 50 days, and of these seven, two were off duty over 200 days in the course of the year. The last two nurses were threatened with pulmonary tuberculosis, but each made an excellent recovery and returned to nursing duties. Nor were there any cases among the other sick nurses which led to permanent disability. All made good recoveries. So that, although the figures would at first sight appear to give cause for anxiety, they need not be so regarded. We simply happened in 1935 to have an unusually large proportion of cases which required prolonged treatment. The causes of the group of somewhat tedious illnesses cannot be ascribed directly to the conditions under which the nurses worked and were housed.

During 1935 a Hospital Housekeeping Certificate course was established. This Certificate is open to members of the staff with two years' experience as Sister. The Course takes six months to complete, and includes in a practical way all the subjects included in Hospital housekeeping. The possession of such a Certificate is of undoubted value to members of the staff when applying for senior administrative posts.



In February, 1935, a Cinema Projector and Cine-camera were provided by the Committee for use in the training and instruction of the nursing staff in a graphic manner. Numerous demonstrations on medical and allied subjects have been given and have proved a very valuable adjunct to the routine lectures. The camera enables permanent records of operations and of interesting cases to be made and also permits of the recording of many interesting incidents in the life of the Hospital.

#### 4. MEDICAL WARDS.

Staff.—Dr. Langley, Visiting Physician.

Dr. Mackay, whole-time Physician.

Dr. Elsie Porter (visiting) assisting with special investigation into Pneumonia.

The Assistant Medical Officers allocated to medical wards.

Miss Rogers (visiting) Electrocardiographer.

The special investigation into Pneumonia, now in its fourth year, continues with promising results. The carefully tabulated results of typing of the causative organism, of the incidence of the disease, and of treatment with serum, are now becoming a valuable guide in the investigation and treatment of Pneumonia. A Paper has been prepared by Dr. Langley, Dr. Mackay and Dr. Stent, setting out the results of the experience so gained, and it will be published in the Quarterly Journal of Medicine early in 1936. The value of the work done at this Hospital on Pneumonia has been recognised, and Dr. Langley and Dr. Stent have been invited to address the International Congress for Micro-biology on the subject in the summer of next year.

GENERAL WORK.—A large number of patients requiring special investigation and treatment passed through the medical wards. Except for the months of September, October and November the wards devoted to adult acute medical cases were always full. From time to time the medical wards were overcrowded particularly in the earlier months of the year and in December. Apart from the seasonal increase in numbers this overcrowding was due to three factors. (1) The overflow of chronic cases from the overcrowded chronic wards; (2) the housing of children suffering from chicken-pox and whooping cough in the special wards when, under normal conditions, these children would have been transferred to Ladywell Sanatorium; and (3) the increase in the number of ante-natal cases in Ward N.W.2 reduced the number of beds available for female cardiac cases. Even under ordinary conditions the accommodation for female acute medical cases was unsatisfactory as during the year many female acute cases passed into the large chronic wards and were difficult to supervise properly. It is desirable to have another ward set apart for female acute medical cases as soon as that is possible.

The Department of Pathology under Dr. G. J. Crawford was able to undertake additional work of investigation—bacteriological, histological and biochemical—during the year, and arrangements were completed in December to open in 1936 a proper diabetic clinic for out-patients at which it is hoped to control the dosage of insulin by blood-sugar estimations.

The urea clearance test was introduced during the year. As a test of renal efficiency in medical cases it almost replaced the older urea concentration tests.

The disease which demanded and received much attention was acute lobar pneumonia. The work continued under the direction of Dr. G. J. Langley. The dosage of anti-pneumococcal serum was controlled by examination of the patient's blood serum from day to day for the presence of agglutinin. The procedure ensured economy in the use of an expensive serum. The therapeutic use of anti-pneumococcal serum has shortened the duration of the acute stage of lobar pneumonia and reduced the mortality rate.

**TUBERCULOSIS WARDS.**—Dr. E. N. Ramsbottom, Senior Tuberculosis Officer, continued to pay his weekly visits to the Hospital with the result that patients who had already received attention at the City Tuberculosis Clinic or Sanatoria continued under his supervision. All new cases diagnosed in Hospital were brought to his notice and treatment instituted without delay. Cases of pleural effusion of doubtful origin were referred to him at his Clinic for continued observation on discharge from Hospital in case they eventually turn out to have pulmonary tuberculosis. This liaison between the Tuberculosis Department and the Hospital is greatly appreciated.

**THE ELECTROCARDIOGRAPH** as an aid to diagnosis in the investigation of cardiac muscle function continued to be useful. Reports on 497 electrocardiograms were made during the year, three reports less than in the year 1934.

**MEDICAL OUT-PATIENT DEPARTMENT.**—This Department continued to be busy. New patients numbered 396. Of these 244 were sent by their private medical practitioners for investigation or for treatment usually of a specialised kind, *e.g.*, physical therapy. Of the remainder 151 came to the Out-patient Department for continued observation and treatment on discharge as in-patients and one walked into Hospital as an emergency case. There were 1,601 return attendances by old patients.

#### DIPHTHERIA AND SCARLET FEVER IMMUNISATION.

##### \*NURSING STAFF.

Nurses tested.....	88
Nurses found to be immune.....	55

##### Nurses susceptible to—

Diphtheria .....	18
Scarlet Fever .....	7
Diphtheria and Scarlet Fever .....	8

The susceptible nurses were immunised if they remained on the staff of the Hospital.

DIPHTHERIA IMMUNISATION OF CHILDREN between the ages of 2 and 14 on admission to Hospital.

Children tested .....	497
Children immune .....	374
Children susceptible. ....	123

Seventy-eight children were completely immunised while in Hospital, the remainder being discharged with instructions to have the course of immunisation completed at the Out-patient Department.

MEASLES PROPHYLAXIS.—During the year it was deemed advisable to have a stock of adult blood serum on hand for use in the prophylaxis of measles in young children. Blood was obtained from 18 healthy male donors who were under 30 years of age, and had suffered from measles. The serum was separated and prepared for use by Dr. Crawford's staff in the pathological laboratory, and a sufficient stock stored against emergency.

#### 5. SURGICAL WARDS.

STAFF.—Mr. Brown, whole-time Surgeon.

Mr. Simmons, General Visiting Surgeon.

Dr. Hunter, Visiting Gynæcologist.

Mr. Milner, Visiting Orthopædic Surgeon.

Mr. Smalley and Mr. Mercer, Visiting Surgeons for Diseases of the Ear, Nose and Throat.

Dr. Flint, R.O.O., Operative Gynæcology and General Surgery.

The Assistant Medical Officers allocated to Surgical Wards.

Dr. Ghosh, Visiting Anaesthetist.

The general surgical operative work has been rather more evenly distributed between the surgeons. Thus Mr. Brown has been able to reduce the number of operations performed by him from 1,202 in 1934 to 794 in 1935. Mr. Brown has been accordingly enabled to devote more of his time to his duties as Deputy Medical Superintendent, and to clinical work in the wards and out-patient department.

SURGICAL DEPARTMENT.—The work in the Surgical Department has continued to increase during the year. With six regular operating sessions per week, and emergency work in addition, there has been considerable pressure both in the operating theatre and in the surgical wards.

The total number of operations for the year shows an increase, which is largely accounted for by an increase in cystoscopic examinations.

Generally speaking, whilst the numbers are otherwise approximately the same as for 1934, there has been an increase in the more major type of operation, throwing extra work on the medical and nursing staffs.

The disadvantages of the present operating theatre have been as pronounced as in previous years. The addition of an extra operation session for tonsils and adenoids, made necessary in the latter part of the year, has added greatly to the congestion in the theatre, and has made the transfer to the new theatres, which is hoped to take place very shortly, seem more urgent and necessary than ever.

The operations were distributed as follows :—

Mr. Brown, Deputy Medical Superintendent.....	794
Dr. Flint, Resident Obstetric Officer .....	282
Assistant Medical Officers.....	76
Visiting Surgeons	
Mr. Simmons.....	280
Mr. Milner.....	179
Dr. Hunter .....	138
Mr. Smalley.....	247
Mr. Mercer.....	127
Surgeons from Radium Institute.....	21
Other Visiting Surgeons.....	8
	<hr/>
	2,152
	<hr/>

The anæsthetics were as follows :—

General : Chloroform, Ether, Gas and Oxygen.....	1,781
Spinal .....	257
Local Infiltration .....	45
Others (Twilight, Evipan, Avertin).....	69
	<hr/>
	2,152
	<hr/>

Anæsthetics were administered by :—

Assistant Medical Officers.....	1,541
Dr. Ghosh .....	461
Visiting Anæsthetists.....	150

It is to be noted that Assistant Medical Officers have to take a large share of the burden in administering anæsthetics. In addition to the above numbers, all the anæsthetics administered in the wards or in the maternity department are given by the Assistant Medical Officers. It is likely, in future, that the number of anæsthetics to be given will increase, and there is every possibility of increasing demands in this respect on the time of the Assistant Medical Officers.

If their time is taken up with this work, less and less time can be given to the work in the wards, more particularly as with the opening up of the wards in the new extensions, the number of wards for which each Assistant Medical Officer is responsible will be increased. Consideration will have to be given to this problem in the near future.

ORTHOPÆDIC DEPARTMENT.—Under Mr. Milner, the Orthopædic Department shows a substantial increase in the amount of work. The number of patients in 1935 was :—

In-patients—	1935.	1934.
In Hospital on 1st January, 1935 .....	45	53
New Admissions .....	344	292
Discharges .....	331	274
In Hospital on 31st December, 1935 ..	43	45
Deaths .....	15	26
Out-patient Attendances .....	1,339	1,150
No. of Patients treated in Plaster Room....	983	953
Anæsthetic administered in Plaster Room	62	64

EAR, NOSE AND THROAT DEPARTMENT.—On 28th May, 1935, Mr. Smalley and Mr. Mercer took over the ear, nose and throat work at the Hospital. At first one operating session for tonsils and adenoids was undertaken. Later it became apparent that there was a considerable number on the waiting list, and an additional operating session had to be undertaken regularly each week.

There is one visiting session for the examination of patients, and in addition one or other surgeon is always available for emergency work. The absence of suitable theatre accommodation has limited the ear, nose and throat work to a certain extent, but this will be relieved immediately the new operating theatre accommodation becomes available.

Dr. Hunter has continued during the year in the work as gynaecologist and has visited once each week for consultation purposes and once for an operating session.

Mr. Simmons, Visiting General Surgeon, has also attended regularly during the year, and has shared with Mr. Brown, Deputy Medical Superintendent, the operative work in general surgery.

SURGICAL OUT-PATIENT DEPARTMENT.—There are two regular sessions each week for the examination of surgical cases. New patients are seen and admission arranged if necessary for operative treatment or investigation. By thus arranging admission in non-urgent cases, excessive overcrowding of the wards can be avoided to a certain extent, and for many patients an unnecessary period of waiting prior to their operation. In addition, cases discharged from surgical



wards, who still require dressings, can be followed up until the treatment is finally concluded. Such patients benefit by being allowed out at this stage in their illness, but can still attend the out-patient department for necessary dressings. During the year there has been an extension of the investigation carried out in the Out-patient Department, and many patients are sent up for such investigation and consultations, and reports of the results sent to their own doctors.

There were 3,612 surgical patients seen by the Medical Officer of whom 252 were casualties, *i.e.*, minor injuries which were treated and sent home.

The accommodation in the Out-patient Department is not entirely satisfactory. In particular, during the winter time, the cold is cause for complaint, in spite of all efforts to keep the patients comfortable. Unfortunately, the patients may have to wait, but this is unavoidable where one Medical Officer has to see as many as 50 patients in a morning.

An extra session has been instituted once weekly for surgical patients who attend for special treatment by the Medical Officer, in order to limit this as far as possible.

The Out-patient Department is of great use in protecting the surgical wards from overcrowding, and it is likely that this work will increase in the future.

Operations.	1933.	1934.	1935.
1. Mouth (including teeth).....	33	31	21
2. Abscess (various).....	113	111	127
3. Gynæcological .....	455	503	486
4. Tonsils and Adenoids.....	587	383	505
5. Bones and Joints.....	214	206	196
6. Stomach .....	68	84	102
7. Liver and Gallbladder.....	11	13	33
8. Appendix .....	263	271	176
9. Hernia .....	135	118	138
10. Genito-Urinary .....	81	127	114
11. Hæmorrhoids .....	62	48	69
12. Breast .....	21	22	5
13. Ear .....	24	33	15
14. Empyæma .....	43	47	26
15. Nose .....	8	3	4
16. Eye .....	2	5	2
17. Brain.....	6	0	1
18. Thyroid.....	1	4	7
19. Various .....	74	71	64
20. Cystoscopic Examinations.....	—	—	61
	2,201	2,080	2,151

Four hundred abdominal sections in 2,151 operations, of which 25 were Cæsarian Sections.

## 6. CHILDREN'S WARDS

STAFF.—Dr. Catherine Chisholm, C.B.E., Visiting Physician for Diseases of Children.

The Assistant Medical Officers attached to Children's Wards.

The arrangements of the wards for children remained in 1935 the same as they were in 1934. The year has been characterised by a large amount of measles, whooping cough, varicella and diphtheria. We have, however, been relieved of a great deal of anxiety and trouble by the promptness with which these cases have been accepted by Ladywell Sanatorium. It is only right to point out that none of the wards now used for infants and children is by any means ideally adapted for the purpose.

In the infants' ward a further decrease in the mortality figures is noted with satisfaction. For 1935 the mortality was 18.3 per cent., which compares very favourably with previous years, when 23 per cent. to 30 per cent. was the average. The mortality has steadily decreased in the past few years, and the value of Dr. Chisholm's careful supervision of the dieting and treatment is very apparent.

## 7. MATERNITY DEPARTMENT.

STAFF.—Dr. Hunter, Visiting Obstetrician and Gynæcologist.

Dr. W. Frame Flint, full-time Resident Obstetric Officer.

The Senior Assistant Medical Officer.

During the whole of 1935 the maternity wards were situated as a temporary expedient in N.W.1 and N.E.3 wards, with N.W.2 as an ante-natal ward. Though these wards were not constructed with a view to the special needs of maternity work, they have been found to adapt themselves on the whole satisfactorily, and the work has proceeded smoothly, and without causing special anxiety throughout the year. It is particularly satisfactory to note that the maternal death rate for cases coming from the ante-natal clinic and also the maternal death rate for clinic and non-clinic cases combined, show decreases as compared with last year.

Dr. Flint's report follows:—

During the year 1935 there have been noticeable increases in the work undertaken by all branches of this department. More new patients have booked for confinement, the ante-natal clinic attendances show a marked increase as likewise the number of cases requiring admission to the ante-natal ward. The number of confinements shows an increase of  $15\frac{1}{2}$  per cent. on the previous year and  $37\frac{1}{2}$  per cent. on 1933. The number of patients admitted for their first

confinement is greater than ever before, and shows a remarkable proportionate increase to the number of patients admitted for second or subsequent confinements. In spite of a larger number of instrumental and assisted deliveries, the incidence of puerperal sepsis and fever show decrease.

The department, throughout the year, has been temporarily accommodated in the New Hospital, occupying three wards.

N.W.1 acted as lying-in ward, with first stage isolation provided by two 2-bed specials of N.W.2. N.W.2 acted as the ante-natal ward, the remaining two 2-bed specials accommodating such ante-natal patients as required isolation. With this arrangement it has been possible to separate the mothers of dead or still-born infants from the nursing mothers and so avoid any resulting distress.

N.E.3 continued to act as potentially septic, and septic but non-infective ward, during the year. By arrangement with Ladywell Sanatorium two cases of puerperal fever were transferred from N.E.3 and both cases ultimately recovered.

This arrangement of accommodation in the New Hospital has been excellent as judged from the returns, although the labour ward and nursery accommodation had several minor disadvantages.

Dr. Hunter continued as Visiting Obstetric Consultant and Dr. Flint as Resident Obstetric Surgeon throughout the year. In view of the increasing amount of work, the Senior Assistant Medical Officer was appointed Assistant Obstetric Officer, and Drs. Cunningham, Ashford and Judson have in turn occupied this post.

#### DETAILS OF WORK IN THE VARIOUS BRANCHES.

##### CLINICS.

##### ANTE-NATAL CLINIC.

Wednesday mornings, total attendances.....	5,285
Thursday afternoons, new patients examined.....	943

##### POST-NATAL CLINIC.

Saturday mornings, total attendances.....	394
Ante-natal patients receiving out-patient treatment or dressings at the out-patient department.....	283

## ANTE-NATAL WARD.

Admissions.		Dismissals.	
Admitted directly.....	418	Transferred in Labour	294
Transfers to N.W.2.....	110	Dismissed to Clinic....	233
		Died undelivered.....	1
	528		528

## ANALYSIS OF THE ABOVE 528 PATIENTS.

False Labours.....	59	Cardiac Disease.....	38
		Bronchitis .....	24
TOXAEMIAS.		Epileptics .....	5
Pyelitis .....	46	Intrauterine Deaths .....	4
Renal Investigation .....	38	Observation .....	13
Albuminuria .....	35		
Urinary Infection.....	19	OBSTETRIC CAUSES.	
Chronic Nephritis.....	4	HÆMORRHAGES.	
Hyperemesis .....	18	Antepartum .....	9
Eclampsia and pre-eclampsia.....	8	Miscarriages .....	15
Acute Yellow Atrophy.....	1	Contracted Pelvis.....	45
Gastrointestinal .....	7	Breech, Versions.....	18
		Overterm .....	32
GENERAL CAUSES.		Abnormal Presentation.....	7
Anæmia and Debility .....	31	Hydramnios .....	8
Oedema .....	13	Various others.....	31

## ANTE-NATAL OPERATIONS.

Chloroform Versions .....	6	Cystoscopy, ureteral catheterisa-	
Chloroform Examinations .....	2	tion .....	57
Hydramnios Tapped .....	3	Operation for Hydatid.....	1
Surgical Induction .....	71	Appendicectomy .....	3
Removal of polyp .....	1	Cholecystectomy .....	1
Cystoscopy .....	11	Intestinal Obstruction .....	2
Cystoscopy, pyelography.....	21	Hysterectomy .....	1
Hysterotomy .....	1		

During the course of the year more than 142 patients have been investigated for renal function and urinary infection. Both investigation and modern treatment have meant a considerable increase in the number of specimens examined by the pathological department. But for the whole-hearted co-operation of this department the favourable results obtained in the toxæmia group of patients would have been impossible.

One ante-natal patient died in the course of the year, with severe eclampsia. Four patients were discovered to have chronic nephritis and the prompt termination of pregnancy saved maternal deaths. Amongst the pyelitis patients those failing to respond to treatment in pregnancy have been followed up into the puerperium, and in the majority the infection has been stamped out by post-natal treatment.

#### LABOUR WARDS AND LYING-IN WARDS.

Total number of confinements.....	848
Normal deliveries .....	567
Normals with repair.....	99
	681
Abnormals and assisted deliveries.....	167
Live Births .....	782 or 92%
Still Births .....	71 or 8.3%
Neonatal Deaths.....	28 or 3.2%
Maternal Deaths.....	12 or 1.4%

#### ABNORMALS AND ASSISTED DELIVERIES.

Forceps Deliveries.....	76
Cæsarian Sections .....	25
Manual Breech Deliveries.....	14
Internal Versions .....	10
Transverse Presentations .....	5
Face Presentations.....	5
Forceps Failed, Internal Version.....	1
Twins .....	5
	140

#### DESTRUCTIVE OPERATIONS.

Craniotomies .....	8
Evisceration .....	1
Hysterectomy (gravid) .....	1
Hysterotomy.....	1
Removal of Mole. ....	1
Therapeutic Induction to terminate Pregnancy.....	4
	16
Monsters not requiring destructive operation.....	6
Intrauterine Deaths .....	3
Died undelivered .....	2
	27



## CÆSARIAN SECTION.

Indication for Operation. Dr. Flint. Dr. Hunter. Mr. Brown.

Cardiac Disease.....	5			
Contracted Pelvis.....	8 (LUS-1)	1	1	Classical ... 24
Placenta Prævia .....	6			Lower Uterine ... 1
Elderly Primipara .....	3			
Epilepsy.....	1			Maternal Death... 0
	23	1	1	Fœtal Death..... 1

The number of Cæsarain Sections shows a decrease (6) on 1934. To some extent this is explained by increase in the number of forceps deliveries, and by the number of cardiac cases delivered under twilight sleep. Decrease in the number of contracted pelvis requiring operation is evident.

## COMPLICATIONS IN LABOUR.

## HAEMORRHAGES.

Accidental Hæmorrhage .....	25
Placenta Prævia.....	12
Post Partum Hæmorrhage .....	14

## DELAYED LABOURERS, ETC.

Contracted Pelvis .....	35	Hydrocephalus.....	2
Occipitoposterior .....	11	Inertia .....	5
Breech Spontaneous.....	9	Fœtal Ascites.....	1
Breech Assisted .....	14	Prolapsed Cord .....	5
Transverse .....	5	Compound Presentation	3
Face .....	5	Retained Placenta.....	5

## INDUCTIONS OF LABOUR.

(a) Quinine Induction.....	17
(b) Surgical Induction.....	71

The figure for surgical induction also includes rupture of membranes in order to control hæmorrhage, or hydramnios, etc.

(c) Bougie Inductions .....	0
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## MINOR OPERATIONS.

Simple Perineal Tears repaired.....	99
Perineal Tears repaired by Doctors.....	31
Complete Tears repaired by Doctors.....	2
Torn Cervix repaired.....	3
Episiotomies .....	9

## FORCEPS OPERATIONS.

By Resident Obstetric Officer .....	46
„ Assistant Obstetric Officers .....	30
	76

## ISOLATION WARD N.E.3.

Total No. of Cases admitted or transferred to Isolation....	161
No. of puerperal pyrexias notified from N.E.3 ..	14
„ „ fevers notified from N.E.3 .....	5
„ ophthalmias notified from N.E.3.....	15
„ pemphigus notified from N.E.3 .....	2

No ante-natal clinic patients died from septic complications. Three non-ante-natal patients admitted to the ward died from septic complications, two of which resulted from failed forceps, the other being febrile on admission. The two remaining patients who showed fever were transferred when diagnosed to Ladywell Sanatorium, and both ultimately recovered.

INFANTS.—This year a return has been made of the number of babies born prematurely. There were 94 sufficiently premature to necessitate special nursing care.

Frequently there were several premature babies in the nursery at the same time, and in order to cope with this contingency three small electric blankets were installed. Satisfactory incubation was then possible for several babies simultaneously.

Prematurity caused 15 deaths in infants under 10 days old.

STILL-BIRTHS.—The number of still-births shows no decrease on previous years. Investigation has been directed into cases of still-birth of no certain maternal cause, and when necessary the patient has subsequently been treated or advised at the post-natal department.

The following is the Ministry return :—

Accidental Hæmorrhage and Placenta Prævia.....	18
Prematurity and Debility.....	15
Toxæmias of Pregnancy .....	7
Post Maturity.....	5
Fœtal Ascites.....	1
Prolapsed Cord.....	2
Birth Injuries.....	9
Craniotomy .....	8
Hydrocephalus .....	2
Anencephalus .....	1
Intrauterine Death.....	2
Unknown .....	1
	—
	71
	—

MATERNAL DEATHS. The death rate in ante-natal clinic patients confined in Hospital in 1935 is 0.48 per cent., showing a welcome decrease on 1934. The death rate for all non-clinic and clinic cases confined in Hospital for 1935 is 1.04 per cent., which is the same as 1934.

## CAUSE OF DEATH.

Clinic Cases.	Non-clinic Cases.
Acute Yellow Atrophy.	Empyema.
Severe Antepartum Eclampsia.	Pneumonia, (two cases).
Acute Cardiac Failure in Labour.	Uræmia.
Obstetric Shock.	Nephritis.
	Failed Forceps (two cases).
	Cardiac Failure in Sepsis.

In addition to the above cases, five other patients died from complication of pregnancy by abortion.

NEONATAL DEATHS.—The number of deaths in infants under 10 days was 28. Prematurity and debility accounted for 24. The following for one death each :—Acute catarrhal pneumonia, cerebral hæmorrhage, asphyxia pallida and hæmorrhagic disease of the new born. The death from pneumonia was confirmed by post mortem examination.

8. TREATMENT OF CANCER BY RADIUM AND/OR X-RAYS.—This work, in conjunction with the Christie Cancer Hospital and Holt Radium Institute, continued throughout the year. The number of cases so dealt with is as follows :—

	1935.	1934.
Patients examined at the Radium Institute ....	33	28
„ to whom Radium was applied here....	21	26
„ treated temporarily as in-patients at the Christie Hospital.....	3	2
„ treated by deep X-Ray therapy as out-patients at the Christie Hospital	14	5

## 9. V.D. CASES.

STAFF.—Dr. Burke and Dr. Marinkovitch, of the Public Health Department.

The Assistant Medical Officer allocated to this Ward.

It has not yet been possible to provide the in-patient accommodation for male patients which is so badly needed. The reconstruction of E.2 Dayroom and adjacent small wards for this purpose was well in hand by the end of 1935.

Thirty-two patients were treated in C.2 X ward in 1935.

10. MENTAL WARDS.—It has not been possible to bring about any alteration for the better in the male or female mental wards. The most pressing problem in these wards, as the Committee fully realise, is the presence of children both in the male and in the female ward. These children are unsegregated from adult mental and mentally deficient patients. Unfavourable reports have been

received on the *accommodation* in these wards, after each visit of the Commissioners of the Board of Control, though it is satisfactory that the Commissioners speak highly of the kindness and careful treatment that the patients—adults and children—receive from the staff. The mental wards form quite the most unsatisfactory department in the Hospital. The Committee are well aware of this, and they have made every effort to obtain better accommodation by approaching the Lancashire Mental Hospitals Board—so far without obtaining any practical assistance.

#### 11. X-RAY DEPARTMENT.

STAFF.—Dr. Ghosh, Visiting Radiologist.

We have had to depend on the old apparatus for all the X-Ray work of the Hospital throughout the year. In spite of this handicap and the increasing demands on this department, good work has been done. The complete new installation in the new Hospital buildings will certainly be ready for use in the first half of 1936.

12. MASSAGE DEPARTMENT. Although the department remained in its cramped quarters during 1935, the work in every branch of massage, electro-therapeutics and remedial exercises has been increased. A new ultra short-wave diathermy apparatus was brought into use in the latter part of the year, and it has proved most valuable.

#### 13. PATHOLOGICAL DEPARTMENT.

STAFF.—Dr. Crawford, City Pathologist.

Dr. Stent, Assistant City Pathologist.

The work done here is an inestimably valuable adjunct to the clinical work of the Hospital. A very great deal of the special investigation into pneumonia has necessarily fallen to the lot of the Pathologists, and the interest and value of this work is becoming increasingly apparent. That, however, is only one (though an important) section of the work.

Dr. Crawford reports as follows :—

The number of examinations carried out at the Pathological Laboratory for the year 1935 totals approximately 11,000. This shows only a slight increase on the work of the previous year, mainly due to the fact that it was impossible to undertake any extra investigations during 1935 without an increase in staff. An extra technical assistant was appointed last December, and it is to be hoped that during the current year we shall be able to cope with the outstanding extra demands made upon the Laboratory.

The work upon the serum treatment of pneumonia is still being continued, and the results of Dr. Stent's work in conjunction with Dr. Mackay and Dr. Langley will be published shortly in the *Quarterly Journal of Medicine*.

On account of the epidemic of measles which was expected during the winter, a supply of "anti-measles" serum was collected in co-operation with Dr. Mackay, from adults who had had measles. This has proved of definite value in preventing outbreaks of measles among contact cases in the wards.

14. **OUT-PATIENTS DEPARTMENT.** References to the work in this Department will be found in the reports relating to the Medical and Surgical Wards. It has been recognised all along, since the out-patients' unit was temporarily established in its present quarters, in 1931, that the rooms were in many ways unsatisfactory. The main hall, which is divided into examination cubicles by curtains, is draughty and cold in winter. The surgical dressings rooms are awkwardly situated behind the stage, and the stage itself is actually used for examination rooms. The increase in the number of patients, including accidents and other casualties, has rendered the defects of the accommodation more obvious. The ante-natal and post-natal clinics, which are also held in this department, not only bring about undesirable overcrowding, but the size of these clinics interferes seriously with the ordinary out-patients' dressings and treatments on certain days in each week.

It is hoped that, soon after the new Hospital wards are put into use, and the patients are redistributed, it will become possible to set aside one of the old wards in the main Hospital for use as an ante-natal, post-natal and gynaecological clinic. Later on it may be possible to allocate another ward for conversion into a clinic for medical and surgical out-patients, and a consultative child welfare clinic.

### STATISTICS.

#### 1. GENERAL.

	Average 1928-1934.	1935.
In Hospital on 1st January.....	886	831
New Admissions.....	7,945	8,371
Live Births.....	706	782
Totals.....	9,537	9,984
Discharges during the year . . . . .	7,535	8,079
Deaths . . . . .	1,071	1,020
Remaining under treatment at the end of the year.....	888	885
Totals.....	9,494	9,984
Mortality .....	11.2%	10.2%
Average cost per patient per week.....	1934. 58s. 1d.	1935. 58s. 10d.

#### 2. X-RAY DEPARTMENT.

	1934.	1935.
Number of Patients.....	3,298	3,631



## 3. DEPARTMENT OF MASSAGE AND ELECTRO-THERAPEUTICS.

(a) <i>Massage.</i>	1934.	1935.
Number of In-Patients.....	352	419
Number of Out-Patients.....	295	299
Totals.....	647	718

## Number of Treatments :—

In-Patients .....	8,893	8,584
Out-Patients .....	5,169	6,098
Totals.....	14,062	14,682

(b) <i>Electro-Therapeutics.</i>	1934.	1935.
In-Patients .....	45	89
Out-Patients .....	135	121
Totals.....	180	210

## Number of Treatments :—

In-Patients .....	1,756	2,755
Out-Patients .....	2,865	3,913
Totals.....	4,621	6,668

(c) <i>Ultra-Violet Radiation.</i>		
Number of Treatments.....	1,037	971

## 3. OUT-PATIENTS' DEPARTMENT.

Dressings and Treatments.....	14,689	15,014
Consultations, etc.....	2,392	2,642
Totals.....	17,360	17,656

## 4. PATHOLOGICAL DEPARTMENT.

Autopsies Conducted.....	175	165
Specimens Examined.....	7,598	9,335

## 5. MENTAL WARDS.

	Male.		Female.		Total.	
	1934.	1935.	1934.	1935.	1934.	1935.
Patients under treatment on 1st January .....	67	63	96	96	163	159
Patients transferred from County Mental Hospital....	—	—	—	—	—	—
Patients admitted during the year .....	152	133	154	119	306	252
Totals.....	219	196	250	215	469	411

## ADMISSIONS.

From Hospital Wards.....	29	39	36	27	} 306	252
From Outside.....	123	94	118	92		
On 3-day Order.....	118	85	109	83	227	168
On 14-day Order (M.O.).....	5	9	9	8	14	17
On 14-day Order (Justice).....	—	—	—	1	—	1

## DISCHARGES.

	Male.		Female.		Total.	
	1934.	1935.	1934.	1935.	1934.	1935.
Released c/o Friends.....	58	41	32	36	90	77
Transfers to Mental Hospital....	40	33	33	33	73	69
Released to other Wards.....	20	29	33	29	53	58
Released to other Institutions..	8	2	11	3	19	5
Discharged during the year.....	126	108	109	101	235	209
Deaths during the year.....	29	30	32	26	61	56

TABLE SHOWING INCREASE IN WORK OF THE HOSPITAL SINCE 1914.

Year.	Admissions.	Births.	Discharges.	Deaths.	Average Daily No. of Patients.	Operations.
1914	2,728	12	2,135	591	749	149
1915	1,632	4	1,393	491	514	160
1916	1,330	—	941	353	439	175
1917	1,263	3	1,058	335	407	145
1918	1,402	16	1,104	391	303	144
1919	1,559	7	1,056	348	339	107
1920	2,516	64	1,736	451	689	163
1921	3,335	227	2,899	617	858	332
1922	3,720	263	3,272	745	888	395
1923	4,463	250	3,749	815	870	430
1924	4,416	182	3,742	922	811	523
1925	5,315	293	4,292	1,015	868	802
1926	5,471	366	4,839	903	943	882
1927	5,801	409	5,125	1,003	943	960
1928	6,430	559	5,545	926	960	1,076
1929	7,477	674	6,936	1,141	918	1,403
1930	7,583	685	7,150	1,038	969	1,807
1931	7,963	812	7,762	1,093	919	2,004
1932	8,321	843	8,156	1,052	961	2,186
1933	8,031	615	7,572	1,084	940	2,201
1934	7,893	745	7,548	1,081	940	2,080
1935	8,371	782	8,079	1,020	912	2,152



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